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AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

IN THIS ISSUE:

- C.S.M.A. Meeting Reports
- Pressurized Foods
- Aerosol Repellents
- Labeling Aerosols
- Test Instruments
- Pesticide Hazards
- Do Users Read Labels?
- Packaging Show
- Aerosol Food Symposium
- Aerosol Survey Results
- European Aerosol Associations

June, 1958

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JUNE, 1958 VOL. 3, No. 6

AEROSOL AGE

The magazine of pressure packaging

THIS MONTH'S COVER

A new refillable aerosol perfume dispenser, called the "Mini-Mist," has been developed by Risdon Manufacturing Co., Naugatuck, Conn. The cartridge and actuator can be easily removed from the decorative metal outer case and inserted in another outer case, or a new cartridge can be inserted in the case the model is holding. Each cartridge holds 250-300 metered applications. The new aerosol containers, which are said to be easy to fill, will be made for fragrance manufacturers in a variety of machine engraved patterns.

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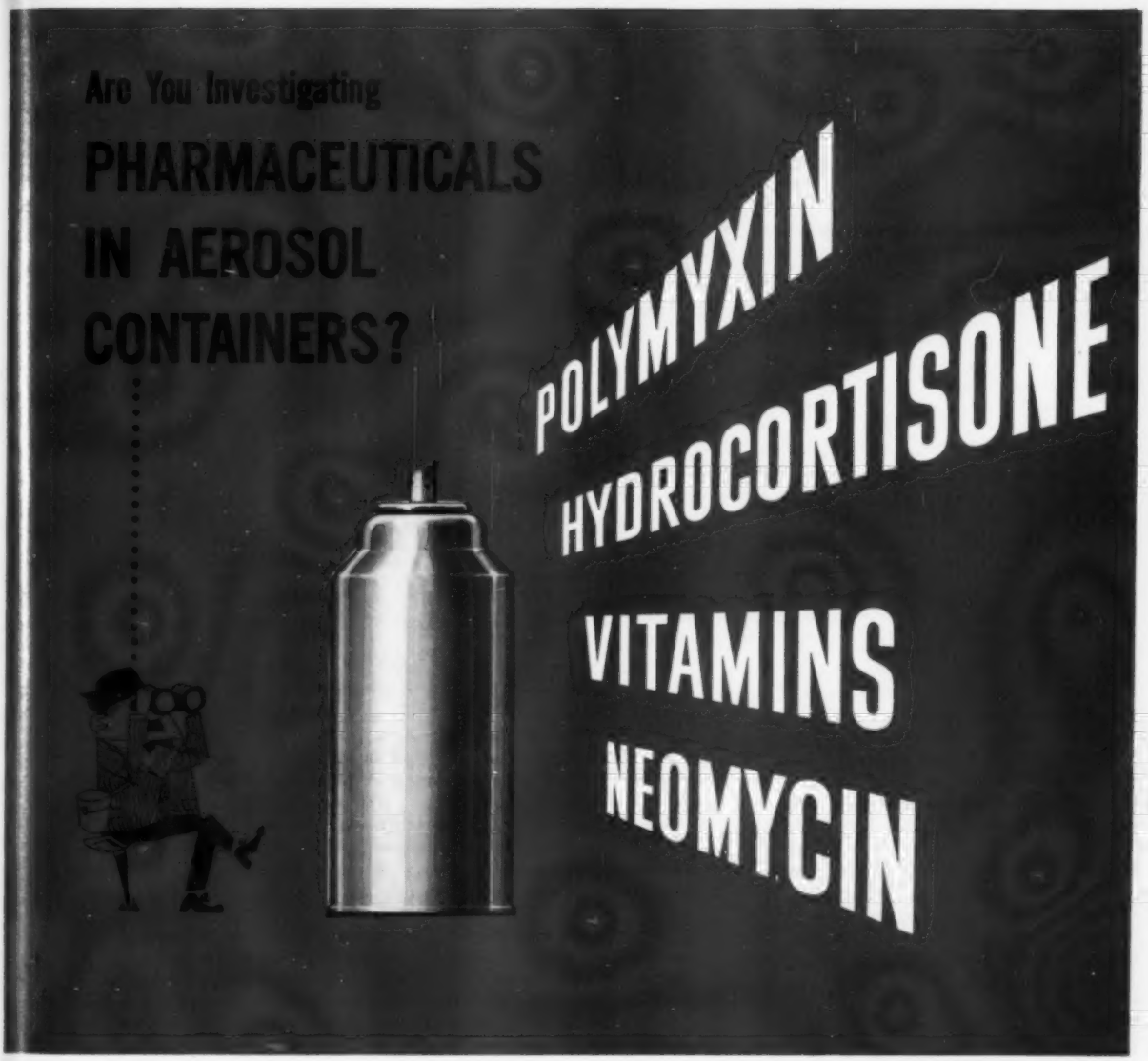

A Progress Report from Pfizer, a Pioneer in Antibiotics.

Day by day the list of successful pharmaceutical products packaged in aerosol containers increases. Have you examined this new development?

For some months now, Pfizer has been working in close cooperation with the aerosol industry, seeking areas where pharmaceutical manufacturers could best be served by aerosol packaging.

Pfizer found that aerosol packaging shows great promise for a number of medicaments. But, of particular and immediate value to you will be information obtained on topical aerosol preparations utilizing Pfizer Hydrocortisone, and the antibiotics—neomycin and polymyxin. Initial experimentation with nitrogen propelled vitamin preparations also shows promise. Should your topical plans include polyvinyl components, Pfizer's results with its non-toxic plasticizers, Citroflex® A-2 and A-4 will prove of value to you.

The acceptance of aerosol pharmaceuticals is based on their several advantages over traditional packaging:

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Pfizer will continue to pursue methods of developing successful pharmaceutical formulations for aerosols.

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from the

EDITOR'S MAILBAG

To the Editor:

In the April issue of *Aerosol Age* appears a special staff article on "Public Relations." In this article you present a "small and select list of trade periodicals" and include *Food Technology* and *Food Engineering* but not *Food Processing*. Certainly the leading publication of the food processing industry should be included in this list.

Howard P. Milleville
Editor
FOOD PROCESSING
Chicago, Ill.

We regret this oversight. The article also neglected to mention Chemical Week, and one or two other leading trade periodicals that should have been included—The Editor.

•

To the Editor:

In the "Pressure Packaging Overseas" column for your March issue, there appear a number of misleading statements about the performance and workmanship of British-built aerosol pressure filling machines.

Being the largest manufacturer of this type of equipment in the U.K., we take a dim view of the conclusions in the article, and would direct your attention to an earlier article in *Aerosol Age* (by A .Herzka in the August 1957 issue) stating that a British manufacturer (namely, ourselves) "is able to supply pressure units more or less immediately, which are not only reasonable in cost but as efficient as any of the equipment manufactured in the U. S. and in Europe."

It would appear that your correspondent is not familiar with our filling unit, which is capable of a production rate of over 6000 six-ounce containers per day. It should perhaps be pointed out at this point that the rate of fill is governed by two major factors: size of valve orifice and the pressure at which the propellant is forced through this orifice. The most important feature of all is that there is an optimum pressure at which the propellant can be fed through the orifice, without subsequent irreparable damage to the valve (and that this pressure is solely dependent on the valve design and has no relation whatsoever to the filling machine.) From this it is clear that any large increase in the filling rate can be achieved *only* at the expense of more damaged valves.

Regarding the article's comments on the selling cost of the equipment, the fact that we do not employ selling agents and are not required to pay either license fees or import duties on our equipment, are the factors that enable us to approach the ultimate user of the unit with a reasonably

(*Turn To Page* 78)

● **CSMA Meeting** . . . CSMA holds highly successful meeting in Cincinnati, with over 1,000 in attendance. Ed McKernan nominated to succeed Earle Graham as chairman of the Aerosol Division.
A complete report on all phases of the meeting of interest to those in the aerosol industry begins on page 16.

● **Whipped Toppings** . . . low-acid foods such as whipped cream and whipped toppings are to be pressure-packed without refrigeration they are more difficult to handle from the microbiological angle than are high-acid or high-soluble solid foods. Most promising method is said to be some form of "aseptic canning." A report on problems in pressure packaging of foods by two experts of American Can's research department, beginning on page 17.

● **Repellents** . . . Promising future is predicted for aerosol repellents. They seem to be a "natural" for the aerosol method of application because of ease of treating clothing with aerosols and the ability to apply the right amount without wasting or spilling. A summary of this report to CSMA on page 21.

● **A New Sales Peak** . . . Aerosols move on up to a new sales peak,—hit production record of 390,000,000 units in 1957,—a gain of 22% over '56. Hair sprays again lead the field, but shave creams take over second place. Aerosol insecticides, for years the market leader, fall to fourth position. A summary of CSMA's annual survey on page 23.

● **Pressurized Foods** . . . Food technologists hear a five-paper symposium on Pressurized foods at Chicago session, featuring the technical considerations and special problems that must be anticipated by those considering the marketing of an aerosol food line. A summary of the advice given by a panel of CSMA experts begins on page 32 of this issue.

● **Packaging News** . . . What's new in packaging and filling equipment, containers, aerosol components, etc.? **Aerosol Age's** representatives provide an up-to-the-minute report on everything of interest to the aerosol filler and marketer at the 27th National Packaging Exposition. Page 29.

● **PVP Acquitted** . . . PVP could not be the culprit causing harmful lung effects in connection with use of hair sprays, says Dr. M. V. Shelanski of the Industrial Biology & Testing Laboratory, Philadelphia, in a report presented at CSMA meeting. Page 16.

EDITORIALS

The New Product Survey . . .

The aerosol boom shows no signs of tapering off. This is the one most obvious fact apparent from a study of the latest Aerosol Pressure Products Survey conducted by the Aerosol Division of CSMA. In this, the association's seventh annual survey, it was clearly demonstrated that the aerosol industry is still in the sharply expanding phase of its growth curve, for the number of units produced and sold by the industry is estimated at 390 million for 1957, approximately 22% more than the 1956 total of 320 million.

What is perhaps even more impressive about these figures is that this very substantial gain was registered without the benefit of any "hot" new product in '57, such as hair sprays a couple years back, or shaving lather, snow or aerosol paints in previous years. Normal expansion in sales of existing products alone was adequate to give the industry a big increase in sales volume, without the benefit of any brand new best seller.

As the aerosol industry continues to develop and expand, it is emphasized once more what a change there has been since the days when aerosol insecticide was first the sole aerosol product, and later at least by a wide margin the biggest seller in the pressure packed field. Now there are three product types that outsell aerosol insecticides—hair spray, shaving cream and room deodorant—and it is easy to predict that within a few years time aerosol sales may bulk no more than five or ten percent of an expanding aerosol market.

While counting totals of 1957 business, those in the industry are understandably looking ahead to some informed guesses as to what totals will be reached in 1958. Predictions are generally in the optimistic side. Aerosol tooth paste is apparently going to be a really big item—some even hazard the guess that within a year or two it could take the sales lead away from hair spray. And there are great possibilities for expanded volume in a whole series of pressure packed food products too. As we see it, there is no reason why '58 sales should not easily reach half a billion units.

If, along with this expanding volume, we could count on seeing some widening of profit margins for fillers as well as for marketers—the industry could be characterized as being in a thoroughly healthy condition.

A Healthy Future . . .

The combined impact of the aerosol symposium at the Institute of Food Technologists Meeting, the many aerosol exhibits at the Packaging Exposition in New York, and the number of successful magazine articles placed by the Publicity Committee of the CSMA's Aerosol Division, should all contribute toward a healthy future for the aerosol industry.

By approaching the technologists and packaging executives (through the IFT and Packaging Show) the industry is assuring itself of a steady stream of new "converts" to the aerosol idea—many from the major marketing firms in the country. Through its approach to the consumer public (by way of articles in *Coronet*, *American Home*, and other leading consumer magazines) the industry is assuring itself of another type of "convert" to the aerosol—that is, one who will begin to look specifically for the pressurized package as a means of more easily dispensing a whole range of new products in his home.

The Food Technologists' symposium on pressure packaging was a definite success, and something similar would be worth while in conjunction with meetings of the major paint associations, the dairy products association, medical and pharmaceutical groups, and other industry and professional groups with an even remote interest in aerosols.

Top left: Dick Burke, Tube Manifold; John Struthers, John Struthers & Co.; and Carl Durant, Aerocide Dispensers.
Top right: Gus Lawrence and Tom Johnson, duPont; and C. S. Stephens and E. Hoffman, Jr., American Can.
Lower left: John de Elorza, Old Empire; Jack Wittke, Oil Equipment Laboratories; and A. S. Pero, Fluid Chemical Co.
Lower right: Harry Peterson, Peterson Filling; Don Tuttle, Risdon; Jack Hohnstine, Boyle-Midway; and Walter Beard, Risdon.

MORE than 750 industry representatives gathered in Cincinnati last month for the 44th mid-year meeting of the Chemical Specialties Association. The three-day meeting was climaxed by an important paper by Dr. Morris V. Shelanski, refuting a contention by three St. Louis doctors that PVP can contribute toward cancerous reactions in the lungs and other organs of the body. The paper, reported in detail at right, attracted the largest audience of any of the aerosol, technical papers.

The only formal election held at the midyear meeting was that of Ed McKernan, of Seaquist Manufacturing Co., Cary, Ill., to be Aerosol Division chairman for 1959, succeeding W. Earl Graham, of Clayton Corp., St. Louis.

PVP Cleared of Medical Hazard By Philadelphia Research Doctor

PVP by itself is not responsible for the pathological changes reported by doctors at the Jewish Hospital in St. Louis, declared Dr. Morris V. Shelanski, of the Industrial Biology and Testing Laboratory, Philadelphia, in a paper before the Aerosol Division of CSMA at the association's 44th mid-year meeting in Cincinnati. Using detailed figures of medical studies of industrial workers involved in PVP production, and expressing serious doubts about the validity of the conclusions drawn by the three St. Louis researchers, Dr. Shelanski cautioned that the article by the St. Louis doctors (*Aerosol Age* May, 1958) could herald the beginning of "blaming hair sprays for a wide range of ills."

The St. Louis doctors had declared, in an article in the March issue of the *New England Medical Journal*, that PVP and other resins used in hair sprays could be blamed for causing residual harmful effects to the lungs and other organs of the human body. In attacking the claims, Dr. Shelanski pointed out that "it is not scientific procedure to base a statement on one case without adequate controls," and that the normal method is to "list all possible causes, and then rule them out one by one on the basis of scientific data."

Evidence presented in the *Journal* article, he contended, would indicate that the foreign material had crossed directly from the lungs into the lymph glands—without attaching itself to the blood cells. PVP, he declared, has too high a molecular weight to have "crossed directly into the body tissue

PVP, Foods, Insecticides Highlight Technical Papers at . . .

Aerosol Sessions of CSMA

in this manner." Furthermore, Dr. Shelanski declared, the staining method used to analyze the foreign matter (found in the lymph glands of the key patient described in the *Journal* article), would produce results to indicate that PVP could *not* be the culprit.

As to the skin infections (of PVP) described in the St. Louis article, Dr. Shelanski said the doctors were actually referring to "frequent" injections of the material, and that the same results could be produced by a wide range of other materials. He said that the FDA had originally approved use of PVP as an emergency blood plasma expander, and since then has allowed use of the material for topical uses (including use on the skin and mucous membranes).

In PVP manufacturing plants at Linden, N. J., and Calvert City, Ky., Dr. Shelanski said, there is "light to moderately heavy PVP dust contamination of the air. At the Linden plant, which has been operating for eight years, over 50% of the dust particles were under 5 microns in diameter, and over 80% under 10 microns. Despite these concentrations, the eight

(*Continued on Page* 71)

Top left to right: John Stoddard, Prentiss Drug & Chemical Co.; Dr. K. P. Link, University of Wisconsin; and Ward Ross, Wisconsin Alumni Research Foundation.
George McLaughlin, McLaughlin Gormley King; Joseph B. Magnus, Magnus, Mabee & Reynard; and W. A. Smith, J. Hayden Twiss.
Bottom Row: Tom Wallace, General Chemical; R. A. Fulton, USDA; and Kenneth Klausner, General Chemical.
J. R. Wallace, Continental Can; Scott Drummond, Fuller Brush; and Jack Scott, Continental Can.

Microbiological Aspects of Pressurized Foods

ONE of the more important aspects of packaging pressurized foods, the microbiological consideration, was the subject of a talk before the Aerosol Division of the CSMA on Tuesday, May 20. Titled "Microbiological Aspects of Pressurized Foods," the paper was prepared by G. L. Hays and D. W. Riester, of the Research and Technical Department of American Can Co., Maywood, Ill.

In low acid, low-soluble foods, such as dairy products, the authors reported, spore-forming bacteria are the most important types encountered in spoilage. "Of these heat-resistant organisms the putrefactive anaerobe, *C1 botulinum* is of paramount importance. All low-acid foods must be processed so that the spores of *C1 botulinum* are destroyed. If the spores of this organism are not killed, they may germinate and produce a very potent toxin in these canned foods. The ingestion of foods containing this toxin may result in botulinum poisoning which has a fatality rate of about 65%."

. . ."The pH values of low-acid, low-solids foods are above 4.5; many of them are nearly neutral and fall into the pH range of 6 to 7. Unless they are to be refrigerated, all low-acid foods must be given a pressure process sufficient to destroy the heat-resistant sporeforming spoilage organisms. These processes may range from several minutes to over an hour, mainly at temperatures of 240° to 250° F. Instead of processing the closed containers in retorts, many of these foods may be sterilized by means of heat exchangers. The sterile product can then be filled into sterile cans in a sterile chamber and the containers closed with sterile covers by a procedure known as 'aseptic canning'."

The authors point out that, regardless of any possible preservative action of the pressurizing gases, any non-refrigerated foods packaged in

processed in a manner similar to the method outlined above.

Messrs. Hays and Riester reported that, though considerable data has been accumulated on the bacteriostatic and fungistatic properties of carbon dioxide and nitrogen at pressures to three atmospheres, "very little" data has been published on these properties of the gases at pressures used in pressurizing foods.

"Golding, Ruyle et al., and many other investigators have observed that high concentrations of carbon dioxide are toxic for molds. On the other hand nitrogen was not observed to be toxic for molds, as 99.5% nitrogen in the presence of 0.5% oxygen did not inhibit mold growth in an acid medium.

"Prucha, et al. observed that milk held under 60 pounds carbon dioxide pressure did not sour for nine days, while untreated milk became sour within 30 hours. These data indicate that carbon dioxide acts as a preservative rather than as a bactericide, it will retard the growth of bacteria but does not kill these organisms.

---

(1): Bill Ackley and Bud Lindsay of Van Ameringer-Hachler, with Maria Weiner of Fluid Chemical.

(2): George Flemming, Guardian Chem. & Equipt. Co., Montreal, president of the newly formed Association of Canadian Chemical Specialties Manufacturers, and Ed Young of du Pont.

(3): left: Bob Foresman, aerosol consultant, H. W. Hamilton, CSMA secretary, and Gene Rose, Gene Rose Co.

(4): Earle Kimble, du Pont, and Ed Helfer, PowrPak-Conn Chem, Inc.

(5): Neil Dickinson, Abbott Laboratories; Al Marks, Wheaton Plastics Co., Bud Alexander, Sun Tube Corp., and J. K. Shea, Peterson Filling.

(6): Dave Tillotson, Pennsalt Chemicals Corp., and George Barr, G. Barr & Co.

(7): Dick Kraus, Stalfort Pressure-Pak, J. Schlossman, Aerosol Research Co., and R. E. Horsey, Givaudan-Delawanna, Inc.

(8): Frank Zumbro, duPont, Joe Tomlinson, General Chemical, and Bob Hamilton, General Aniline.

(9): Sylvan Lefcoe, Par Industries, John Rodda, Fairfield Chemical, and Milton Schwartz, Revlon.

(10): N. F. Gurley Simoniz Co., and Tom Rink, Mojonnier.

(11): Roy Ferry, VCA, Art Schober and T. J. Christiansen, Dow Chemical.

(12): Eugene Sunnen, Sunnen Products, and Al Edelstein, Synchro Mist Controls.

"The above data would indicate that mold growth should not be a problem in foods pressurized with carbon dioxide. Due to the solubility of carbon dioxide, this gas can only be used to produce whipped or foam products."

The authors caution that the non-toxicity of nitrogen for molds is important when it is used as a propellant in pressurized foods. "It is not practical to remove oxygen either by mechanical or thermal methods to a low enough level so that nitrogen will inhibit mold growth. In carefully controlled experiments Golding and Miller, using mixtures of air and dry nitrogen, found that the amount of oxygen dissolved in the medium was the controlling factor in the growth of molds. They observed the germination of all mold spore studies, when the dissolved oxygen content was at least 0.08 volumes of oxygen soluble in 1000 volumes of water. Pressures between 0.5 and 2.0 atmospheres did not affect the oxygen requirements of the molds studied. Higher gas pressures probably would not materially affect the oxygen requirements or molds.

. . . "Syrups filled hot into cans to render these products 'commercially sterile' still contain enough dissolved oxygen to support mold growth. Commercial experience has indicated that if 'commercially sterile' syrups are cooled before gassing, molds will grow in the product if it should be accidentally contaminated during this operation. The officially permissible amount of sodium benzoate is effective only in acid foods. This preservative should not be relied upon to prevent spoilage in low-acid syrups. Therefore, these products should be gassed while hot, if at all possible."

The authors suggest that ascorbic acid or glucose-oxidase should theoretically reduce the dissolved oxygen content in pressurized syrups below the growth range of molds, but declared that they themselves have not experimentally determined the effectiveness of these oxygen acceptors.

They warned that when pressurized low-acid foods (such as whipped cream and whipped toppings) are not to be refrigerated they will be more difficult to package in pressure containers than are the high-acid or high-soluble solid foods. "Not only will these foods have to be rendered 'commercially sterile' but the container and valves will have to be sterilized. If these foods cannot be filled into containers and gassed before being subjected to an adequate process, then the most promising

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Instrumentation for the Aerosol Industry

THE first detailed discussion of "Instrumentation for the Aerosol Industry" was a paper presented before a joint session of the Aerosol and Insecticide Divisions of the CSMA on May 21. W. B. Leighton, manager of aerosol technical service for the Union Carbide Chemicals Co., Division of Union Carbide Chemicals Corp., New York, presented the paper, which included a detailed summary of available instruments, together with a discussion of a whole group of new aerosol instrumentation devices.

In this former category Mr. Leighton pointed out that "aside from the CSMA tentative method for measuring aerosol insecticide particles, there is no complete standard apparatus designated for the aerosol industry and none commercially available." He pointed out, however, that certain standard pieces of apparatus can be incorporated in complete instrument arrangements for particle size studies.

"Particle size studies are, of course, of particular significance to the insecticide industry. The USDA and the CSMA, through publications and furnishing of a standard aerosol insecticide, have generally established that for space sprays 100% of the particles should be no larger than 50 micron size and 80% should be less than 30 micron size. The pharmaceutical industry now lends emphasis to particles of even smaller size for inhalation type aerosols. They are interested in a particle range of 0.5 to 5.0 microns.

"The insecticide industry is of course also interested in particle sizes for residual sprays in the range of 50 to upwards of 200 microns. With these larger drop sizes it has been reported that particle collection must be made on stationary slides with the aerosol sprayed on to them perpendicularly from a distance of about three feet and in a quiet air zone. Since the larger droplets fall very rapidly, the spray time for collection of an adequate number is a second or less, and slide coatings to hold the drops become extremely important. Magnesium oxide has been considered as a good coating that is readily cratered by drops over 30 microns in size and is reported to retain a true impression even after the original drops have evaporated."

In the category of spray measurement devices, Mr. Leighton described the special counting device available from Bete Fog Nozzle, Inc., Greenfield, Mass., in which a caliper counter is used to tabulate magnified particle images on a micro projection screen. "Each setting of the calipers," he said, "corresponds to a definite micron size particle range. With a given setting the operator can check off all particles of that size or greater and automatically count them by pressing the foot treadle for each particle checked."

Two new portable aerosol particle collection units for field use developed at the Stanford Research Institute were also mentioned. One is a continuous gravity settling chamber in which aerosol particles are drawn by airflow across the shallow pan and distribute themselves in accordance with particle size at various settling velocities. "Analysis of the droplets and their distribution at various stages can be made, including collection of leaving particles in a special micro-pore filter. The gravity unit is stated to cover particle sizes in the range from one to 50 microns."

The second unit is equipped with ten removable sections for particle size separation. This one is designed

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Legislative Requirements in Labeling Aerosols

MEETING legislative requirements in the labeling of aerosol products is only part of the marketer's responsibility to adequately label the product, declared Robert T. L. Ackerly of the firm of Cummings, Sellers, Reeves, Conner & Kendall before the May 21 joint meeting of the CSMA's Aerosol and Insecticide Division. "First and foremost," declared John Conner, who read the paper for the absent Mr. Ackerly, "is the necessity to direct the proper and safe use of the product and to warn of hazard which may be encountered during use.

"The direct result of adequate directions for use and a clear precautionary statement is the reduction of illness and injury resulting from use of these products. Secondarily, but important to the manufacturer is that a properly prepared label can reduce and minimize product liability claims. It is always a happy situation when defending product liability claims to have in evidence a well prepared label with a clear statement of the hazards which may be encountered in the use of the product."

Mr. Connor praised the CSMA for its work in the labeling field. "There has been relatively little legislation concerning the labeling of aerosols. This fact is silent tribute to the fine work that this association has done in the field."

Returning to the full responsibilities of the marketers, the attorney warned that meeting all the federal, state and local regulations offers no guarantee that a label will fully protect the manufacturer or distributor from product liability claims. "In fact, there are numerous court decisions pointing out areas in which the manufacturer or distributor may be vulnerable even though the label has been registered by an appropriate government agency. The fact that the label does not meet these requirements may be admissible in evidence, but it does not require the court to rule on the sufficiency of the label as a matter of law."

Mr. Conner cited a May 7, 1958 Supreme Court of Florida case in which a jury verdict of $160,000 was awarded for a death resulting from the use of carbon tetrachloride. In the case it was held that the jury was entitled to consider the label as a whole in determining whether it was sufficient to have warned the user of the dangers "inherent in the customary or reasonably anticipated use of the chemical." Although the manufacturer offered the argument that the label met the requirements of the federal and state insecticide acts, this defense was stricken from the pleadings in the trial court.

"The court stated the extent of the manufacturer's duty in the following language: in other words, the obligation of the distributor of a commodity inherently burdened with a potential danger is not restricted to the individual with whom he immediately does business. It is not just a contractual obligation. *It is an obligation arising out of a duty to take reasonable precautions to avoid reasonably foreseeable injuries to those who might use the commodity.*

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Chlorothene for Personal Product Aerosols

A REPORT on a whole series of toxicological studies of Chlorothene* for aerosol products was a highlight of "The Role of Chlorothene in Personal Product Aerosols," a paper presented to the May 20 meeting of the Aerosol Division by Arthur E. Schober, Halocarbon Section, Dow Chemical Co., Midland, Mich. Mr. Schober concentrated many of his remarks on hair sprays, which recently came under fire because of the reportedly harmful effects of certain of their ingredients.

In the new tests, Mr. Schober reported, it was demonstrated that the administration of "single oral doses of Chlorothene yielded LD_{50}'s for laboratory animals ranging from 5.6 g./kg. for rabbits to 12.9 g./kg. for rats. The material was shown to cause slight transitory irritation in the eyes, with little likelihood of permanent injury. The toxicity from skin absorption was found to be low. Doses of 4 g/kg. failed to kill any rabbits exposed for 24 hours. Repeated multiple daily applications of 500 mg./kg. to the skin of rabbits caused no effect other than a reversible local irritation.

"Laboratory animals were exposed repeatedly to 500 ppm., 1000 ppm. and 10,000 ppm. in order to establish conditions safe for repeated exposure. Rats, guinea pigs, rabbits and monkeys were unaffected after six months of repeated seven-hour exposures five days per week to 500 ppm. Female guinea pigs, which were found to be the most sensitive in previous experiments, were able to tolerate 1000 ppm. for 0.6 hour per day for three months and 2000 ppm. for 0.1 hour per day, with no detectable adverse effects. Male rats tolerated exposure of 0.5 hour per day to 10,000 ppm. with no organic injury. The effects of the material have been shown to be primarily anesthetic, with only slight capacity to cause reversible injury to the lungs and liver.

"The following concentrations are considered safe for human exposures: eight hours daily repeated exposures, 500 ppm.; one hour daily repeated exposure, 1000 ppm.; levels appreciably above 1000 ppm. are known to cause anesthetic effects promptly and should be avoided."

Mr. Schober reported that the American Conference of Governmental Industrial Hygienists has listed the threshold limit for the material as 500 ppm., and points out that this means that it is unlikely that "any adverse physiological effects would result from atmospheric concentration of 500 ppm. Chlorothene for eight

* Chlorothene is the registered trademark of The Dow Chemical Co. for its inhibited 1, 1, 1-trichloroethane.

(1) Wiley Pickett, Pennsalt, Abe Winer, Puritan Distributing, and Frank Lucard, Pennsalt.

(2) Walter O'Neill, Newman-Green, Hoke Lonergan, Polak's Frutal Works, Martin Hassel, Frontier Chem. Prods. Co., and Ed Green, Newman-Green.

(3) Rusty Husted and Art Chivvis, Union Carbide, Don Menhennett, Eveready Products, and John Matthews, Airosol Co.

(4) N. W. Kent, du Pont, Clarence Carter, Continental Filling, Jack Varley, James Varley & Sons, and Paul Torpin, MGK.

(5) Doug Atlas, G. Barr & Co., J. Lyons, General Aniline and Morrie Root, Barr.

(6) Robert Webster, Ohio Chemical, Otto Weil, Aerosol Research, and Jack Campbell, Continental Filling.

(7) Franklin Dick and Leo Gans, Anchor Plastics, E. W. Rose, Jr., Gebauer, and Harold Rilling, Precision Valve.

hours a day, five days a week, for a working lifetime."

When formulated into hair sprays, he declared, there is no "appreciable difference between formulations containing 26% Chlorothene and hair sprays containing no Chlorothene insofar as effects resulting from contact with skin, eyes or from inhalation are concerned." He admitted however, that hair sprays containing 51% of the material appear to be more

(*Turn To Page* 76)

Diethyl Toluamide Aerosol Repellents

ONE-POUND tin-plated steel is probably superior to the lighter tin coatings for pressure packaging for diethyl toluamide aerosols, reported H. F. Pierce, of the Naval Stores Department of Hercules Powder Co., Wilmington, in an address on "The Use of Diethyl Toluamide Insect Repellent in Aerosols." The paper was presented before the Aerosol Division of CSMA at its 44th midyear meeting in Cincinnati.

Mr. Pierce declared that one-pound tin-plated steel is also superior to other synthetic coatings, insofar as corrosion inhibition is concerned. "Since diethyl toluamide is somewhat hygroscopic, an effort should be made by the formulator not to allow the material to be exposed to the air for long periods." He cautioned that the acid number of the material is even more important, from a corrosion standpoint, than is moisture content.

"Propellant 12 and combinations of 11 and 12 have been used in diethyl toluamide aerosol formulations, but it is believed that straight Propellant 12 is employed most frequently and will probably be specified in U. S. Government specifications. Methyl chloride is undesirable because of its tendency to release hydrochloric acid. Acid formation should be avoided or corrosion difficulties may be encountered inside the aerosol container. In this respect the acid number of the commercial diethyl toluamide itself should be kept below 0.15.

Mr. Pierce pointed out that the perfuming of diethyl toluamide aerosol formulations can be an important factor. "To assist in spreading qualities, especially on the skin, it is suggested that at least an equal amount of denatured absolute ethanol be added to the formulation. Some formulators may desire to add even more alcohol. A mildly denatured ethanol rather than isopropanol is preferable from an odor standpoint. Apparently, a large percentage of the public objects to the odor of isopropanol, and its odor is more difficult to mask or perfume.

"Diethyl toluamide has a mild, pleasant characteristic odor, which," the speaker commented, "some formulators have not wished to mask or perfume. If a perfumed aerosol is desired, several perfumes are available. USDA workers have not demonstrated that perfume decreases the effectiveness of any insect repellent, including diethyl toluamide. The remainder of the formulation (in addition to the 15% by weight of diethyl toluamide) consists of propellant."

Mr. Pierce was particularly optimistic about the growing consumer market for repellents in aerosol form. "In addition to the growing public acceptance of pressurized packages, there is an excellent reason for the acceptance of diethyl toluamide packaged in this manner. It is found in

the ease of treating clothing with aerosols, and the ability to apply the right amount without wasting or spilling any. In areas where mosquito populations are heavy, it is not enough to treat only the exposed skin with a repellent, for the pests will bite through thin shirts and trousers, particularly where the clothing is stretched rather tightly against the body. . . . No detailed directions need be given on the labels, simply for the user to spray the proper parts of his clothing sufficiently to cause wetting. Although pressurized packages are quite suitable for skin treatment, we believe that clothing treatment in particular will result in a great deal of popularity for diethyl toluamide aerosols."★

Do Users Read Insecticide Labels?

ARNOLD MALLIS of Gulf Research & Development Co., Pittsburgh, in a paper co-authored by A. C. Miller and W. C. Easterlin (also of Gulf) reported on the results of a survey conducted during November and December, 1957 to determine the extent to which users of household insecticides read labels of these products. In general the survey indicated that many users are *not* familiar with the important cautions which should be observed in connection with the use of aerosol and liquid household insecticides.

It was recommended that manufacturers should make greater efforts to encourage and educate users to read labels of insecticide containers before applying the products.

Brand names were familiar to 75% of the users queried, the sample consisting of 1,206 male and female users, about evenly divided between direct interviews and filled-in questionnaires. A total of 34% of those surveyed reported knowing at least one important ingredient of the product used, thus establishing with some degree of assurance that they had read the label. The three ingredients mentioned most frequently were: DDT (45%), chlordane (20%) and pyrethrins (11%).

Some 65% of those surveyed reported that they read all the instructions on the label before applying the product. This figure was considered to be higher than would be justified by other findings in the study, however, for it was assumed that anyone having read the label would be familiar with at least one precaution, and only 43% so reported. The precautions mentioned most frequently were: (a) do not inhale—avoid contact (39%) (b) avoid spraying food (32%) and (c) inflammable or explosive (20%).

The important precautions connected with aerosol use (a) do not expose to excessive heat (b) do not incinerate (c) do not puncture, were reported by only 8% of the 529 in the test sample who used aerosols exclusively.★

Aerosols, Hand Sprayers, Companion Products

"SPRAYERS Can Help Your Insecticide Business" was the message developed in a talk by Philip L. Hauser of Root-Lowell Mfg. Co., Chicago. He recalled that when aerosol insecticides were first introduced there was a feeling in some quarters that the low pressure aerosol might make hand sprayers obsolete. There was no such result, however, and census figures show that the number of sprayers produced and sold annually has actually more than doubled since aerosols first came on the market. Sales of space sprays moved up from 10 million packages in 1951 to over 24 million in 1956, while sale of residual sprays increased from 23 million packages in 1951 to over 31 million in 1956.

"The sprayer industry," said Mr. Hauser, "does not generally consider that the aerosol is particularly a competitor of hand sprayers. Rather they consider it a companion product. Many economy-minded people enjoyed insect-free surroundings through the use of an aerosol and then later discovered that at least the same results could be accomplished with liquid insecticides dispensed by a good hand sprayer at less cost. There seems to be a definite market for both."

The speaker emphasized that price of a sprayer should be distinctly a secondary factor. Most important should be effective performance, which means that the sprayer must (1) break the insecticide into the proper droplet size; (2) dispense the insecticide in sufficient volume; and (3) dispense it with enough force to carry it to the insects to be killed. Some sprayers sold will do none of these things, and as a result do a dis-service to the customer and are harmful to sales. Even top quality insecticides, the speaker reminded, are less effective than inferior grades efficiently applied.★

•

Insecticide Hazards

PREVENTION of poisoning by insecticides requires far greater attention to labeling and packaging. This was a warning issued by Dr. Mitchell R. Zavon, of Kettering Laboratories, University of Cincinnati, before a meeting of the Insecticide Division of the CSMA on May 20. In his paper, titled "Confine Insecticide Hazards to Insects," Dr. Zavon quotes an article by Dr. B. E. Conley, writing in the *Journal of the American Medical Association*, which declares that pesticides cause 6 to 10% of the 100 to 150 deaths per year from accidental poisoning by this class of materials.

Dr. Zavon acknowledged that many of these cases cannot be attributed directly to household insecticides, but cautioned that for every fatality reported there is a large but unknown number of non-fatal accidents as well. He further reported that an estimated 20% of all pesticides manufactured go into non-agricultural uses.

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1957 Aerosol Production Shows 22% Gain Over '56

PRESSURIZED hair sprays continue to be the leading aerosol product type, and have increased their lead over shave creams, insecticides, and room deodorants. This fact was revealed in the new "Survey of Aerosol and Pressurized Products Filled in 1957" read to the Aerosol Division of the CSMA at the association's 44th midyear meeting.

Total aerosol figures continued their upward surge in 1957, the survey revealed. The 1957 total reached 390,000,000 units, an increase of 22% over the figure of 320,000,000 reported for 1956.

Frederick G. Lodes, president of Lodes Aerosol Consultants, Inc., New York, (and chairman of the Aerosol Division's product survey committee) who delivered the report, declared that "On the basis of previous estimates and a general knowledge of the prices of aerosol products on the retail market, it is estimated that the total retail value of aerosol products sold in 1957 is approximately $390 million. It is very interesting to note that the aerosol production growth over the past seven years has been consistent, and relatively high in comparison to other industries. A 22% increase is both exceptional and most satisfying."

Women's hair sprays, accounting for 94,431,000 units of the 390,000,000 total, rose 18.5% over 1956. Aerosol shave lathers captured number two position among the product types, approaching a 51 million total, which was 21% more than 1956.

Room deodorants were in the number three sales spot, almost identical with aerosol insecticides which for many years dominated the field and were in number one position two

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SURVEY OF AEROSOL AND PRESSURIZED PRODUCTS FILLED IN 1957
(NON-FOOD PRODUCTS ONLY)

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION
INCORPORATED

Number of units filled by 92 companies in their own plants in 1957, including government contracts.

	NUMBERS OF UNITS FILLED				
	Glass	*Metal Containers*			
Product	*Containers All Sizes*	*16-Ounce But Over 12*	*12-Ounce But Over 6*	*6-Ounce And Less*	*Total*
INSECT SPRAYS					
1. Space Insecticides	....	3,088,153	20,698,639	2,094,887	25,881,679
2. Residual Insecticides (such as roach and ant sprays, etc., including insect repellents)	....	1,154,589	3,713,756	2,972,269	7,840,614
3. Residual Insecticides—Plants (household and gardens)	....	657,642	1,105,130	183,027	1,945,799
4. Mothproofers (including all fabric pests)	....	1,835,247	3,995,300	109,227	5,939,774
COATINGS					
5. Pigmented and Metallic Paints	....	15,089,859	12,101,791	3,334,304	30,525,954
6. Clear Plastic Sprays	....	2,615,334	1,547,575	1,839,001	6,001,910
HOUSEHOLD PRODUCTS					
7. Room Deodorants	*	1,055,020	10,361,674	30,572,194	41,988,888
8. Fire Extinguishers	....	2,219,226	172,606	....	2,391,832
9. Snow (all types)	....	2,047,839	2,215,886	486,171	4,749,896
10. Glass Cleaners	*	10,961,242	266,383	*	11,227,625
11. Shoe or Leather Dressings	....	517,780	917,668	2,837,652	4,273,100
12. Other Household Products (cleaners of all types such as metal, oven, rug and upholstery; waxes, water repellents, etc.)	*	735,144	3,134,415	1,635,744	5,505,303
PERSONAL PRODUCTS					
13. Shaving Lather	....	*	9,399,209	41,469,078	50,868,287
14. Hair Sprays	1,406,729	12,060,459	28,850,599	52,114,170	94,431,957
15. Medicinals and Pharmaceuticals (such as fungicides, burn treatments, topical antiseptics, anesthetics, antibiotics, etc.)	967,673	....	347,610	4,483,786	5,799,069
16. Colognes and Perfumes	17,724,553	....	*	156,575	17,881,128
17. Sun Tan Preparations	....	....	....	618,445	618,445
18. Other Personal Products (such as shampoos, personal deodorants, hand lotions, powders, depilatories, etc.)	1,180,487	*	1,625,970	3,177,205	5,983,662
MISCELLANEOUS					
19. Miscellaneous Products (such as pet, mildew, automotive and industrial sprays, lubricants and any others)	....	5,235,558	8,143,429	2,256,893	15,635,880
TOTALS	21,279,442	59,273,092	108,597,640	150,340,628	339,490,802

* Too revealing to be released.

An automatic fire extinguisher has been designed by Watermatic Valve Manufacturing Co., Spring Lake, N. J. It employs a Canco 16-ounce container, an Oil Equipment Valve, and will retail for $2.98.

Poudre Glace, reportedly the first bath powder in an aerosol form, is a new product of Millot, Inc., New York perfume marketer, that will retail at $3.50. The fragrance is the company's "Crepe de Chine," a moss-based floral bouquet, sprinkled with bergamot and shadowed with wood and musk.

A self-spray marine outboard motor lacquer, color-matched to leading outboard motors, has been introduced by Plasti-Kote Inc., in a 16-ounce aerosol can retailing at $1.89. The lacquer is said to be resistant to gas, oil, and salt water.

NEW PRODUCTS AND PACKAGES

Isaly's Dairies, Youngstown, Ohio, has added a 16-ounce pure whipped cream dessert topping to its product line. Packaged in a Crown side-seam container, it will be marketed through the company's 115 stores in Ohio and Pennsylvania. Valve is by Aerated Container Corp. of Chicago.

Brite No. 3 is a new lacquer spray for aluminum and chrome introduced by the Pomar Corp. of Hollydale, Calif. It is based on a cellulose polyester called "Half-Second Butyrate" supplied by Eastman Chemical Products Inc.

High-Gloss Varnish is a new aerosol paint product by Krylon Inc., Norristown, Pa. It will retail at $1.79 for a 10-ounce container and is said to be heat and alcohol resistant enough for use near stoves and ovens.

Three new silicone-base water repellent products in Europe, all packed by Aerosol-Service, AG, Riehen, Swiss custom filler are *Tobler Sy-Test* (a product of Tobler & Co., AG Altstaetten, Switzerland); *Bally Water Check* (Bally AG. Schoenenwerd) and *Woly Silicone* (A Suter, Munchwilen) The first two are in tinplate containers (by Metal Box and Staehle respectively) and the third is in an aluminum can (by Fabrique d'Emballages Metalliques SA).

AEROSOL

Aerosol Coffee Highlights 27th Packaging Exposition In New York's Coliseum

AEROSOL coffee, cream, and sugar served at the Fluid Chemical Co. booth at the 27th National Packaging Exposition in the New York Coliseum, May 26 to 30, proved to be one of the outstanding features of the show and consistently brought to a halt the lines of visitors wending their way through the four floors of this year's show. Almost 400 companies exhibited new technical advances in packaging at the exposition sponsored by the American Management Association.

Besides the aerosol coffee, which was one of the newest items exhibited, Fluid Chemical displayed its entire line of pressure packages.

The General Chemical Division of Allied Chemical Corp., New York, again sponsored a display that presented a complete listing of contract fillers and outlined the benefits of aerosol packaging. General Chemical manufactures "Genetron" propellants that are suited for formulating a wide range of aerosol products. General's "Aerosol Information Center" also displayed new methods and materials of interest to experienced aerosol packagers. Many major container and valve manufacturers exhibited samples of their products and supplied bulletins and other information on their uses and advantages.

A display of plastic-coated aerosol bottles, presented by the Wheaton Plastics Co., Millville, N. J., was prominent among the aerosol exhibits at the show. Wheaton also manufactures moulded plastic accessories for aerosol packages, including a new line of protective caps that resist contamination and corrosion, and the Wheaton "Nebu-Halor," a one-piece oral inhalator which also serves as a protective cap for the container.

The basic theme of the aerosol exhibitors in this year's show seemed to be the inherent advantages of pressure packaging itself, rather than the announcement of new developments in packages and products.

The American Can Co., New York, presented its entire line of pressure cans, said to be the largest such line of any manufacturer. Canco cans range from the three ounce size up to 16 ounces, and a feature is the commercial coated side seam which permits the package design to go completely around the can. Prior to this, of course, a bare strip of metal appeared at the seam.

Information on valves was made available by the Risdon Manufacturing Co., Naugatuck, Conn. On display was the Risdon "GB" valve, with a wide variety of stock or custom-made actuator designs with ferrules to fit 20 mm and 15 mm aerosol finish containers. Risdon also showed protective caps in standard or custom-made designs.

Gilbert Plastics, Inc., Hillside, N.J., displayed its new plastic stack-caps, which are molded from sturdy impact plastic, and are available in all colors to match the package color scheme. The advantages claimed for the stack-caps by the manufacturer are that they make aerosol cans easy to stack, display, and ship.

The Continental Can Co., New York, sponsored a display of all its packages, which included eight different sizes of aerosol containers.

An actual aerosol filling operation was carried on by the J. G. Machine Works, New York, at its booth in which they pressure-packed small cans of lubricating oil on a J. G. Pressure Filler. The demonstration cans were distributed to the booth's visitors. The propellant used in the packaging was "Isotron," a product of the Pennsalt Chemicals Corp., Philadelphia.

The Hope Machine Co., Philadelphia, displayed new double and single spout automatic filling machines. The filling range of these units ranges from 10 to 60 containers a minute. They are designed to handle liquid, semi-solid, or viscous products. Also displayed was a small, floor model Hope filling machine with a 40 quart capacity.

The Elgin Manufacturing Co., Elgin, Ill., demonstrated a filling machine for aerosol toothpaste that can also be adapted to other aerosol filling jobs.

A complete working model of a 300-can-per-minute pressurized food line was set up by Mojonnier Associates, Inc., Franklin Park, Ill. Also included at the Mojonnier booth was a 20-minute sound motion picture which traced the installation and development of a typical aerosol filling installation. The movie demonstrated how the Mojonnier lines are custom tailored from standard units.

The Builders Sheet Metal Works, Inc., New York, presented information on its aerosol filling equipment line which includes a complete aerosol laboratory set-up. Among the individual units shown by Builders Sheet Metal were hand operated and air powered can crimpers, combination can and bottle capper, small production cold filler, nitrogen filler, pressure fillers, and can pressure testers.

Disposable cylinders for aerosols and compressed gasses were shown by the Tube Manifold Corp., N. Tonawanda, N. Y. The cylinders are designed for cup type or any other standard fitting. Compact and portable, they save space and are easy to carry.

The MRM Co., Inc., Brooklyn, displayed a complete, automatic liquid filling line, including vacuum or grav-

ity fillers of simple design, as well as automatic and semi-automatic labeling machines, which can be placed on conveyor lines to automatically receive discharged containers for labeling and movement to other process stations. The MRM "Semi-Matic" labeler is said to be the only semi-automatic labeler that applies labels to containers in an upright position. The automatic machine can handle labels ranging in size from "postage stamp" size to six by seven inches and handles containers up to 12 inches in height and seven inches in diameter.

A round container labeler was shown by the Labelette Co., Chicago. This machine handles containers of glass, tin, or fiber. Container sizes acceptable to the machine range from one ounce to one gallon.

Potdevin label pasters, available in hand or motor-driven models, were demonstrated by the Potdevin Machine Co., Teterboro, N. J. The machines are said to save up to 30% of labeling, wrapping and packaging time. Rugged, all-metal construction, brass rollers, and oilite bearings minimize the chances of breakdown. The exact coating required for labels can be controlled with a Potdevin Coating Regulator.

Although not a new machine, the Dumatic Roll-Feed Labeling machine received considerable attention from aerosol packagers at the show. Answering the need for extremely accurate labels on pharmaceutical aerosols, the Dumatic machines, which are distributed by the Globe Ticket Co., Philadelphia, will produce accurate labels each time because they are designed to take labels from a continuous roll. With labels fed from a continuous roll directly onto the container, inspection cost is negligible since it is necessary only to inspect the first label on the roll. Heat sealing adhesives especially formulated for adherence to glass, metal, wood, paper, acetate, or fabrics are employed in the labeling process.

The Chisholm-Ryder Co. of Pennsylvania, Hanover, Pa., exhibited its line of "New Way" labelers. The "V" models, which are used extensively for aerosol can labeling, can easily be adjusted to accommodate containers of different sizes. Chisholm-Ryder also offered a "Can Marker" for printing the name of a product in series around the body of a container before the label is applied.

A portable imprinting machine designed specifically for an aerosol line incorporates a flexographic printing system and imprints up to 600 units per minute. The machine is a product of Adolph Gottscho, Inc., Hillsdale, N. J. It is called the Markocoder Portable Imprinter. Gottscho also demonstrated a "Rolaprinter" coding and imprinting attachment that attaches to a wrapping, bag-making, packaging machine, or conveyor and automatically imprints packages during the packaging operation.

Information was available from the Peterson Filling and Packaging Co., Danville, Ill., on the facilities available at its plant for both liquid or aerosol filling.

E. I. du Pont de Nemours & Co., Wilmington, Del., displayed aerosol bottles made of Zytel nylon resins. The non-breakable containers are manufactured in graceful shapes and combinations of built-in colors. Zytel is unaffected by propellants and most spray mixtures.

The Crown Cork & Seal Co., Philadelphia, displayed its packages which are used with foods, cosmetics, and pharmaceuticals. Crown also announced at the show that it has developed a new technique for purging oxygen from freshly filled packages. It is the Crown 28 Purging Machine that will operate at up to 300 containers per minute.

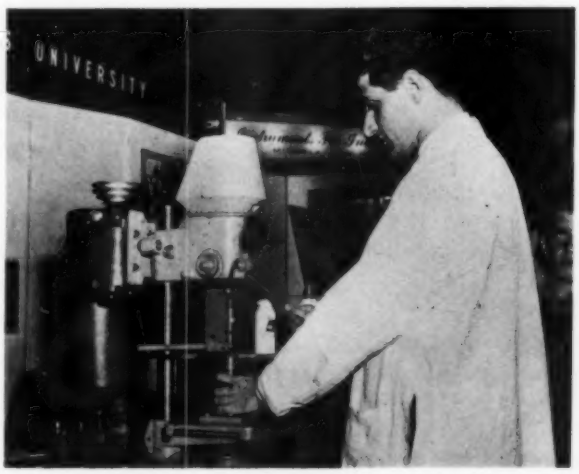
Alpha Engineering & Machine Works, Mount Prospect, Ill., introduced its pressure filler and product filler at the show. These pieces of equipment are designed for rotary action and a resultant high production. They can be scaled down to medium or 60 cans-per-minute production, however. Alpha is marketing a complete line of equipment for packaging of pressure-dispensed products.

A line of aerosol valves that includes a new one for aerosol toothpaste was displayed by the Sun Tube Corp., Hillside, N. J. Sun Tube, a subsidiary of the American Can Company, also displayed its complete line of collapsible tubes for a wide variety of products.

A packaging conference, sponsored by the American Management Association, was held in conjunction with the exposition at the Hotel Statler, New York, May 26 to 28. Among the topics discussed were systemation, packaging operation, and integrated materials handling systems.★

Aerosols Demonstrated at Westbury Fair

Marked interest in aerosols was manifested by Long Island housewives, do-it-yourself exponents, and students of all age brackets at the Science Fair held recently at Westbury High School, Westbury, L. I. A special exhibit was sponsored by St. John's University to demonstrate the pressurized package.



Left: Dr. John J. Sciarra, associate professor of pharmaceutical chemistry at the Pharmacy College of St. John's, demonstrates the crimping of a spray valve on a plastic-coated glass bottle of perfume. In the right background can be seen a propellant tank, part of a cold filling apparatus.

Hair-spray container of ZYTEL® nylon resin is new, practical, has sales appeal.

Consumer research proves

women are willing to pay more for aerosols in bottles made of Du Pont ZYTEL® nylon resins

"WOULD YOU BUY THIS NEW TYPE OF AEROSOL IF IT ADDED 15¢ TO THE PRICE?"—and 53% of all women queried answered YES.

"... IF IT ADDED 30¢?"—and 43% still answered YES.

In fact, up to 75% of those women who expressed a preference for aerosols over other types of containers were willing to pay 15¢ to 30¢ more for the new type.

These were some of the results of a recent consumer survey carried out by an independent research organization. This survey proved that women will pay a premium price for cologne and toilet water packaged in aerosol bottles made of ZYTEL nylon resin.

The survey showed clearly that these nylon bottles add considerably to the sales appeal of personal products. One particular advantage stood out above all the others ... 65% of all people questioned were strongly in favor of a non-breakable container for toiletries, and these bottles are just that. They bounce undamaged off tiled floors!

Consider also the advantages in styling—graceful shapes, combinations of built-in colors, lightness of weight and translucency that lets the customer see how much is there. Furthermore, ZYTEL is unaffected by propellents and most spray mixtures.

Details of this valuable survey are available to you on request. Send for your copy now. We also welcome technical inquiries concerning the design and use of ZYTEL® for aerosol containers.

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Send for facts on aerosols. New on the market, aerosols of ZYTEL may solve your packaging problem and make your sprayed product a much-talked-about item.

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☐ **Send me your report: "COLOGNES AND TOILET WATER IN AEROSOL CONTAINERS—A MARKET STUDY OF CONSUMER ATTITUDES"**

*Name*_____

*Company*_____ *Position*_____

*Street*_____

*City*_____ *State*_____

*Type of Business*_____

IN CANADA: Du Pont Company of Canada (1956) Limited, P. O. Box 660, Montreal, Quebec

The CSMA Aerosol Division's Booth at the Institute of Food Technologists Meeting at the Palmer House, Chicago. From the right (in the photo at left) are Dick Shea, Peterson Filling, Gordon Gilroy, Precision Valve, Al Mulliken, CSMA, and Dick Brown, Precision. In the photo at right Dick Brown and Dick Shea are at right. The others in the photos are food technologists being shown aerosol food products in operation.

Aerosol Symposium Featured at Food Technologists' Meeting

THE ESTIMATE of 500 million food aerosols by 1959 is not unrealistic if the food processing industry heeds recent non-food aerosol developments. This was the opinion of a board of aerosol speakers at a special symposium on "Pressurized Foods" May 27 at the 18th annual meeting of the Institute of Food Technologists, held at Chicago's Palmer House. Speakers, supplied by the Aerosol Division of the CSMA, included W. E. Graham, Clayton Corp.; H. T. Hoffman Jr., American Can Co.; E. D. Giggard, Continental Can Co.; Robert C. Webster, Ohio Chemical & Surgical Co. Division of Air Reduction Co.; and Victor J. DiRocco, of Hueblein, Inc.

"In view of the success of the non-food aerosol industry, the lack of development of pressurized foods by the food industry to date is surprising," Mr. Graham declared. He cautioned food technologists not to produce pressurized "gimmicks," pointing out that convenience alone cannot be the only selling feature, "There must be a time or irritation saving factor to make the product sell."

As major problems facing the individual food company contemplating packaging its products under pressure, Mr. Graham listed: physical modification of product to permit packaging in aerosol containers; biological stability or preservation of product; the economics of packaging under pressure; and pertinent food laws and regulations.

Most of the developmental work for the food industry has already been done by the non-food aerosol industry, he declared, and gave, as an example of this, the fact that most of the valves utilized for non-food products can also be utilized with minor adjustments, for food products.

"Past successes in specialty type packaging," Mr. Graham concluded, "indicate that the American public is anxious to have foods packaged in a handy form."

PRICE will be of paramount importance in the question of whether or not to develop any particular food product, declared Mr. Webster. He cited the example of a pressurized barbecue sauce (Hueblein's) which in its aerosol form is six to eight cents more expensive (in packaging costs) than the conventional package of the same product. "Whether or not its convenience justifies the price difference is a key factor in the product's success, "and this will be the problem for all products developed in the future."

"Any research program on pressurized foods can best be carried on with the assistance of a specialized outside research source. The major can companies, custom fillers, and propellant suppliers offer complete laboratory services which will bolster the research activities of the food manufacturer. The combined research activities should then be directed toward resolving the following factors:

1. Product-propellant relationships
2. Product-valve relationships
3. Product-actuator relationships
4. Product-container relationships
5. Product-end use relationships."

Most food manufacturers, Mr. Webster said, are insufficiently equipped to handle the complete development of a pressurized food product. and would be well advised to under-

DOING HANDSPRINGS?...

... trying to keep up with today's killing pace? Relax, brother, relax! It isn't worth the price. But here's something that *is: Let FRITZSCHE'S staff of perfume specialists take over your fragrance problems.* Put it up to them to provide you with appropriate perfumes tailored to your products at whatever prices your budget will permit. These experts will study your materials, develop fragrances, and even panel-test them to assure you the best possible odor value for your money. Then, after your own critical evaluation and approval, FRITZSCHE will supply the selected perfume concentrates promptly on order in any quantities required. When you let FRITZSCHE take over this responsibility you can bid farewell to your fragrance worries. It costs nothing to try our service ... you pay for the fragrances we develop for you *only when* and *if* they earn your approval. Isn't this suggestion worth a try?

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SUPPLIERS of ESSENTIAL OILS, AROMATIC CHEMICALS, BASIC PERFUME and FLAVOR RAW MATERIALS

take a combined research project, making use of all the resources of the various suppliers.

Turning to the problem of whether the food manufacturer should install his own line or use the services of a custom filler, Mr. Webster said a number of considerations would enter into making such a decision. Lack of available capital for such a project, production facilities or trained personnel, or lack of knowledge of the field, he suggested, may cause the food manufacturer to turn his product over to a custom filler. "Due to experience and established facilities, the custom filler is in a very excellent position to package. The food manufacturer probably would not package until the volume or economics were sufficient to overcome the large capital expenditure for packaging equipment."

THE CUSTOM filler's role in pressurized foods also came in for discussion in "The Food Processor in the Pressurized Food Field," a paper by Victor J. DiRocco, of Heublein, Inc., Menlo Park, Calif., first marketer of an aerosol food (other than a whipped cream product).

"Relatively few custom fillers," Mr. DiRocco pointed out, "are equipped to package foods. However, it will be only a matter of time until most of the custom fillers in the country will have the knowledge of special food problems, and this, added to their knowledge of the non-food field, will cause competition to become keen."

Cautioning both the food processor and the custom filler against short cuts, he said the introduction of a product without sufficient shelf-life, formulation, valve function, and other studies would surely result in inferior products. Within the confines of his own plant, he pointed out, the food processor will probably have better control of the product and also have a better knowledge of production and component costs.

Mr. DiRocco briefly outlined the history of his own company's "Sizzl-Spray" barbecue sauce, and revealed that one of the early problems was selecting a single formulation from among 40 different regional barbecue sauces and then reformulating that sauce for the aerosol package. "Modifications in the formulation had to be made so that it could be dispensed through a valve with one 16/1000th of an inch limiting orifice. The effects of the relatively high pH factor of the formulation (3.5) had to be considered on the valve parts and the can lining."

He reported that shelf life studies are particularly important in all food products, and that in the case of "Sizzl-Spray" a vacuum evacuation of the residual oxygen in the container to less than 1% was sufficient for an adequate shelf life. On the problem of product pasteurization, he reported that bringing the container and product to a temperature of 190°F. eliminated all flora.

In conclusion, Mr. DiRocco mentioned the *tremendous* potential for the food packager, and listed its three principal consumer appeal factors as quality, convenience, and sales appeal.

THE FIRST of two strictly technical papers at the pressurized foods symposium was "Packaging Requirements for Pressure Propelled Foods" by D. W. Riester, H. T. Hoffman Jr., and R. C. Warner of the American Can Co., Barrington, Ill. Mr. Hoffman who read the paper, reported on various methods studied to overcome product change on dispensing, gas spurting and spattering of product, and excessive product retention in the case of higher viscosity products. Also studied by the Canco researchers were preservation, color and flavor retention, and container service life.

On the product retention problem in the nitrogen package, he reminded that the food container must be charged to a higher degree to expell all of the product. Because of the increased head space corrosion in the nitrogen package will become a major problem, Mr. Hoffman declared. "The larger relative head space will call for a more rigid oxygen removal in the container."

Weight loss due to propellant seepage through the valve clinch is not as important a problem as was first anticipated, he said. In prolonged shelf testing at room temperature, 40°, 70°, and 98°, weight loss was negligible. However there was a marked rise in percentage loss at 130°F.

One logical method of increasing the nitrogen in the product package, he suggested, is by agitation, which in most cases will permit 2 to 5% more nitrogen to be gassed into the product. This is feasible, he reported, with most products but chocolate syrup, coffee, and other similar products, which show aeration when agitation is used.

Another method is charging at higher temperatures. One possible method, he said, would be to charge at 190° F.

A SECOND technical paper, "Heat Preservation of Pressure Dispensed Food Products," by E. D. Giggard and P. B. Gottschall of the Continental Can Co., Chicago, touched on some of the same problems as did Mr. Hoffman's paper. Mr. Giggard, who read the paper, pointed out that it is usually neither practical nor desirable to merchandise most pressure dispensed food products under refrigerated storage, and that heat is the most logical means to insure against spoilage.

The two types of product spoilage were classified as:

1. Subect to spoilage only by vegetable organisms.

2. Subject to spoilage by the outgrowth of bacterial spores.

For The first of these, he declared, spoilage can usually be overcome by holding the product at 170° to 200°F. for several minutes. In this category he put all products with a pH of 4.5 or below, and included salad dressings, tomato sauces, etc.

In this method of treating the product, he cautioned, there is the possibility of recontamination of the container during cooling and charging.

For the second category, in which he included all vegetable and meat products, he advised charging the propellant hot, thus eliminating the vege-

(*Continued on Page* 71)

Big Expansion in Market Predicted for Aerosol Colognes and Perfumes

SALES of aerosol-packaged colognes and perfume should total more than 40 million units in 1959 and aerosol colognes alone should reach sales volume of $100 million. This is the prediction of Donald S. Tuttle, Jr., sales manager of the Valve Division, The Risdon Manufacturing Co., Naugatuck, a leading maker of aerosol valves.

Aerosol packaging within the next few years can conceivably do for the entire fragrance industry what it already has done for hair spray manufacturers—boost the sales of colognes and perfumes by several hundred per cent, he explained.

During 1956 almost nine million units—about one-third of all colognes and perfumes sold in the United States—were packaged in aerosols, Mr. Tuttle said. Last year the total probably was twice as large.

In 1956, colognes alone, in conventional and aerosol packaging, accounted for nearly two-thirds of the fragrance industry's sales volume—$58,340,000 of a total cologne and perfume volume of $91,200,000. Although the sale of aerosol-packaged perfumes has been negligible in the past, Risdon's sales manager pointed out that in 1957 there was a rapidly growing demand for perfumes in aerosol packages as well as for colognes. As a result, he predicted, aerosols will soon be the dominant packaging method in the entire fragrance field.

If aerosol-packaging of fragrances receives increased promotional support from fragrance manufacturers, the press, and retail sales personnel, as indicated the past year, both cologne and perfume sales should skyrocket. "They will follow the sales pattern set by hair sprays and become one of the best-sellers in the aerosol packaging industry," Mr. Tuttle predicted.

Mr. Tuttle based his forecast on the sharply rising sales curve of aerosol valves designed and used mainly for fragrances.

Aerosol fragrances will capture a larger proportionate share of the market, but more important they will create an entirely new market for fragrances. The record of hair sprays offers an excellent precedent for this, he said.

According to Mr. Tuttle, sales of hair sprays and lacquers were practically non-existent, except to professional beauty operators until they were packaged in aerosols. Then sales skyrocketed to 79 million aerosol units in 1956.

Surveys among sales personnel have indicated that at least half the potential fragrance market is untouched, he pointed out. Reports indicate that one-fourth to one-half of the women in the United States—who should be using perfume and cologne as regularly and naturally as they use lipstick—never purchase it. Many of the reasons given to explain this large, untapped market can be eliminated by aerosol packaging, Mr. Tuttle concluded.★

Females Dominate Purchasing Decisions McCall Toiletry Survey Discloses

AEROSOL toiletry product marketers who aim their advertising specifically at the American male, may well be missing their principal target, the woman of the family. This is the finding of a survey, recently released by *McCall's Magazine*, which indicated that four out of every five of all toilet goods purchases are made by either the wife or some other adult female in the family.

Called "McCall's Drugs and Toiletries Purchases Diary Study," the survey uncovered the somewhat startling information that the wife or mother does two-thirds of the actual buying of the family needs in drugs and toiletries, and in six out of ten cases she initiates such purchases and makes the final decision on the choice of brands.

Results of the survey were compiled by the Home Testing Institute from a 2500 cross-section of the institute's national panel, and were compiled from actual purchase diaries

(*Turn to page* 40)

PERSONAL DEODORANTS—(Spray)

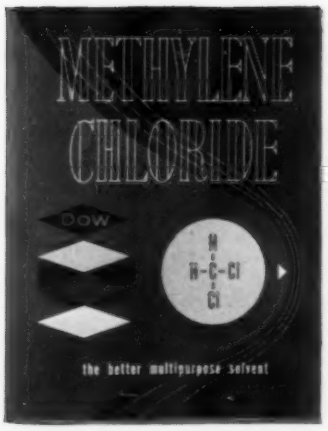
		Families Purchasing	*Dollar Value of Purchases*
WHO BOUGHT	Wife	55.2%	55.9%
	Husband	28.4	28.4
	Boy Under 20	1.5	1.0
	Girl Under 20	3.0	2.0
	All Others	11.9	12.7
WHOSE IDEA	Wife	44.8%	46.4%
	Husband	32.8	32.7
	Boy Under 20	3.0	2.8
	Girl Under 20	3.0	1.9
	All Others	16.4	16.1
WHO DETERMINED BRAND	Wife	47.8%	48.5%
	Husband	28.4	28.6
	Boy Under 20	4.5	3.9
	Girl Under 20	3.0	2.0
	All Others	14.9	15.1

SPRAY
INSECT REPELLENT

JAMES W. BAMPTON, President of Thomasson of Pa., Inc., aerosol formulating and packaging firm, tells why he uses Dow Methylene Chloride as a vapor pressure depressant in aerosols.

"Dow Methylene Chloride improves our aerosol formulations, cuts costs, too."

"We use large quantities of Dow Methylene Chloride in many of our high-quality aerosol products. And for very good reasons. First, it saves our customers money on propellant costs. Dow Methylene Chloride also blends readily with other ingredients and helps control spray characteristics. Our new plant will include a large tank farm for in-process storage of methylene chloride."



economy
As a replacement for propellant "11", Dow Methylene Chloride lowers the unit cost since savings are effected in practically every phase of product preparation.

improved solvency
The use of Dow Methylene Chloride permits excellent solubility of the active ingredients.

safety
Can greatly reduce fire hazard because Dow Methylene Chloride has no fire or flash point.

YOU, too, can benefit in many ways by using Dow Methylene Chloride as a vapor pressure depressant. Check these outstanding advantages, then write for a copy of the DOW METHYLENE CHLORIDE booklet which shows the dollar savings you can realize and other useful information. THE DOW CHEMICAL COMPANY, Midland, Michigan, Department SO 1153D.

YOU CAN DEPEND ON DOW

kept by this cross-section for the full month of November, 1956.

The large percentage of purchases by women is particularly noticeable in the principal male product, shave creams (which included aerosols). Women purchased almost a third (31.3%) of all shaving creams, as against only 68.3% bought by men. The female member of the family roundly dominated the purchases of other products with aerosol application, including hair sprays, with 96.6%; hair tints and dyes, 100%; toothpastes, 79.4%; and colognes, 90.7%.

On the question "Who determined the Brand?", the only aerosol toiletry category dominated by the male of the family was shaving cream. In 67.5% of the purchases, the male determined the brand, as against a mere 8.8% for the wife and 4.1% for the "child under 20." In the other categories, the woman's brand preference completely dominated the buying. In toothpaste, for instance, brand choice in 62.8% of the cases was made by the wife, leaving 15% for the husband, 11.4% for children, and 11% for "all others." For hair spray purchases, women determined the brand in 76.2% of the purchases as against 7.8% for children, 14.1% for others, and a paltry 1.0% for the husband. Similar figures were recorded for hair tints and dyes, colognes, and sachets, in the purchase of all of which the husband had far less effect on the choice of brand than the child under 20.

The McCall's study was made mainly to provide useful information to makers and marketers of drugs and toiletries. In addition, to the products listed above, it also covered some 90 other products or product groups.

In the preface to the findings, the authors declare: "Patterns of marketing and distribution in the fields of drugs, toiletries, and cosmetics have undergone significant changes in recent years. Some of the factors contributing to these changes are the growth of supermarkets and suburban shopping centers, and increased emphasis on door-to-door and direct mail selling."

Readers are cautioned that the study was designed to measure buying influences and product and brand decisions, rather than to measure sales volume. "No attempt should be made to project the findings of this survey, based on purchases made during one of the 12 months of 1956, to national sales figures."

Additional information on the survey is available from McCall's, 230 Park Avenue, New York 17.

SHAVING CREAM—(Including Aerosol)

		Families Purchasing	*Dollar Value of Purchases*
WHO BOUGHT	Wife	32.0%	29.7%
	Husband	52.4	48.6
	Boy Under 20	4.4	3.7
	Girl Under 20	1.0	.6
	All Others	17.5	17.4
WHOSE IDEA	Wife	7.3%	6.4%
	Husband	74.3	69.0
	Boy Under 20	5.3	4.7
	Girl Under 20	.5	.2
	All Others	18.9	19.1
WHO DETERMINED BRAND	Wife	10.2%	10.1%
	Husband	72.3	66.6
	Boy Under 20	4.4	3.9
	Girl Under 20	.5	.2
	All Others	19.4	18.6

HAIR SPRAY FIXATIVES

		Families Purchasing	*Dollar Value of Purchases*
WHO BOUGHT	Wife	80.3%	79.3%
	Husband	3.7	3.5
	Girl Under 20	4.8	4.6
	All Others	13.3	12.6
WHOSE IDEA	Wife	78.2%	76.7%
	Husband	.5	.4
	Girl Under 20	9.0	9.1
	All Others	14.9	14.0
WHO DETERMINED BRAND	Wife	79.3%	77.4%
	Husband	1.1	1.0
	Girl Under 20	6.9	7.6
	All Others	13.8	12.9

TOOTHPASTE

		Families Purchasing	*Dollar Value of Purchases*
WHO BOUGHT	Wife	78.1%	72.1%
	Husband	19.9	16.6
	Boy Under 20	2.4	1.5
	Girl Under 20	3.2	2.1
	All Others	9.2	7.6
WHOSE IDEA	Wife	73.9%	66.3%
	Husband	18.6	15.0
	Boy Under 20	6.6	5.2
	Girl Under 20	7.6	5.8
	All Others	10.8	8.5
WHO DETERMINED BRAND	Wife	71.2%	63.6%
	Husband	18.7	15.2
	Boy Under 20	7.2	5.8
	Girl Under 20	7.4	5.4
	All Others	10.2	8.5

When your customer sees—and smells—how quickly and effectively MEELIUM works, how *spring-fresh* it makes the air, it can mean more sales for you.

MEELIUM works effectively because it neutralizes and destroys both organic and inorganic odors completely—it doesn't merely cover them up. And it can do the job in an average-sized room in from 3 to 5 seconds—your customer will like this kind of economy, too.

MEELIUM in suggested concentrations is chemically stable, non-corrosive, and about equal in toxicity to pyrethrins. It is supplied to the aerosol industry as a 60% active deodorant.

MEELIUM is practically odorless. If a fragrance is desired we suggest a maximum of .1% of a suitable perfume.

WRITE TODAY FOR COMPLETE DETAILS ON ECONOMICAL MEELIUM FORMULATIONS AND CONTRACT PRICE SAVINGS.

TRY THESE PRENTOX PYRONYL AND PYRETHRUM PEST-TESTED PRODUCTS

Pyrethrum Extract #20 • Pyrethrum Extract #100 • Pyrethrum Extract 20% • Pyronyl #20 Pyronyl #100 • Universal Concentrate • Pyronyl #101 • 50-5 Oil and Emulsifiable Concentrate 40-5 Concentrate • 20-8 Concentrate • 66-6 Oil and Emulsifiable Concentrate • Pyronyl 75—The Oil-Free Concentrate • Roach Spray Concentrate • Pyrethrum Powder • Dust Concentrates

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This is the second in a bi-monthly series on pressurized packaging in Great Britain and Eire

Aerosols in Great Britain

By A. Herzka, B.Sc., A.R.I.C.
Research Department
The Metal Box Co., Ltd., London, W.3

AT THE March Exhibition of the Oil and Colour Chemists Association (O.C.C.A.) in London, visitors to the booth of the Nobel Division of Imperial Chemical Industries, Ltd. were handed copies of a technical bulletin which gave details of seven nitrocellulose lacquers formulated solely with "Arcton 6" (Freon 12, Genetron 12 or Isotron 12). These are:—

wood lacquer (pull-over type),
wood lacquer (burnishing type),
black car lacquer,
white refrigerator lacquer,
green tinting lacquer,
red metal lacquer, and
chromium plate lacquer.

These formulations have all given satisfactory spraying properties with standard brass-stemmed Precision valves having a side orifice diameter of 0.018" and using a 40:60 propellant: product ratio which gave a gauge pressure of approximately 40, p.s.i.g. at 21°C. The white refrigerator lacquer mentioned above is formulated as follows:—

DHX 30/50 (IPA damped)	11.4% by weight
Paralac 385 or resin M.S. 2.	10.0% by weight
Dibutyl phthalate	3.7% by weight
White chips	13.3% by weight
Solvent	61.6% by weight

Solvent:

Methyl isobutyl Ketone	85.0% by weight
Isopropyl alcohol	7.5% by weight
"Sextone" B	7.5% by weight

White Chips:

Rutiox CR	75.0% by weight
DHX 30/50	15.0% by weight
Dibutyl phthalate	10.0% by weight

The viscosity is adjusted to 42-48 seconds at 20°C. in a No. 7 B.S. cup by dilution with the given solvent formulation.

Visitors were shown metal and wood panels sprayed with the appropriate formulations and there was also a display of empty Metal Box tinplate dispensers, fitted with Precision valves.

Previous activities of the Nobel Division of I.C.I.)which, incidentally, manufactures the nitrocellulose) have been concerned with the development of touch-up lacquers for leather and other pigmented touch-up lacquers for metal. For all previous formulations a propellant mixture consisting of "Arcton 6" and butane was employed. A laboratory pressure filler was also on display.

A new fire extinguisher, the first British-packaged on the market.

WITH reference to butane it is interesting to record that commercial butane as purchased in the United Kingdom may vary in pressure between 17 and 35 p.s.i.g. at 70°F. It may consist of n-butane, iso-butane and/or butene and propane. It is impossible to obtain pure n-butane or pure iso-butane, due to the fact that the material is obtained from cracking plants and not from natural sources. The manufacturers consider it uneconomical to supply the pure material. As a concession one of the two manufacturers is prepared to supply wholly saturated material at a small price premium, if ordered for propellant purposes, which is also practically odorless.

The first British packed pressurized fire extinguisher has recently been marketed. Sold under the trade name "GWISH", it is packed in 12-ounce cone top decorated tinplate dispensers fitted with French Safca M.P.3. valves. The retail price is 12/6 (U. S. equivalent—$1.75) each.

Another product which is creating interest is "Clair de Lune" Spray-Set, available in five different shades. In addition to "Natural" (tintless) sheer sheen, the following are offered:— "Sable Royal", "Pure Gold", "Cop-

(*Continued on Page* 79)

Gunter Neumann, Dr. Karl Thomae, GMBH, Biberach/Riss; Hans Leichsenrign, Oligin, Wiesbaden; and Hermann Dullberg, Hermann Dullberg, Hamberg.

Friedrich H. Hans (of Pegasus International Corp.), secretary of the Frankfurt group, addressing the first organizational meeting of the Frankfurt Group to form a German aerosol association. The meeting, held April 15 in Frankfurt, was reported on fully in the May issue of *Aerosol Age*.

Frankfurt Aerosol Group Meets

The executive committee of the Frankfurt Group. From left are Hans Hentzel, of *Parfumerie & Kosmetic*, Frankfurt; Dr. Kurt Jacobi, J. A. Schambach Blechwarenwerke AG, Braunschweig; Hans Schloss, Propan-Schabert GMBH, Munich; Eberhard Obrocki, Haarmann & Reimer GMBH, Holzminden; Dr. Werner Hoffman, Precision Valve International, Frankfurt; and Professor L. W. Haase, Berlin-Wilmersdorf.

European Aerosol Associations

By F. G. Lodes
Lodes Aerosol Consultants, Inc.

I RECENTLY spent two weeks in Europe investigating the activities of the various Aerosol associations that are currently underway, visiting France, Switzerland, Germany and England. Although my time was limited and my itinerary did not permit a visit to all countries, I nevertheless interviewed individually close to fifty persons whom I believe represent a very good cross section of the Aerosol industry in Europe and its interests. I had conversations with propellant manufacturers, valve manufacturers, container manufacturers, fillers, suppliers and marketers both large and small, as well as of course, the individuals responsible for association activities. My activity was confined mostly to aerosols, although several expressions of interest were made for the other divisions of CSMA.

I was pleasantly surprised at the great enthusiasm and interest shown by those responsible for the association work and the individuals who have devoted their time and efforts to this cause are to be complimented. It is now beginning to show definite signs of accomplishment.

Of particular interest was the firm belief in association activity, and likewise, the sincere belief that association activities would be a contributing factor to aerosol prosperity and growth in Europe. There seems to be no question that the CSMA has been the guiding light and a fine example for their objectives, and an association modeled structurally after the CSMA seems to be the fairly universal aim.

In France, a National French Aerosol Association appears definite, several meetings having taken place in support of this movement. After formation of the National Association, the general opinion is that membership in an international group such as the International Aerosol Association in Switzerland would be a definite reality and one which would be rewarding in the long-range thinking.

In England, formation of a National Aerosol Association has not as yet been too successful, for there the feeling is much stronger for membership in an international group. The question of whether member companies of the national group will become members of the international group, or whether the national group as a body would become a member of an international group, is one of the subjects still being considered by many of the prospective members, and will undoubtedly clarify itself in the not too distant future.

In Germany, association activity is much stronger and further advanced than in either France or England, and although I found here also a definite interest in national association activities, I believe that with a clearing of the minds on problems relating to representation, a closer cooperation between the German group and the international group in Switzerland will undoubtedly take place.

The majority of opinions expressed indicated that Switzerland would be the most logical country to house aerosol international interests for many reasons unique to peoples speaking different languages and particularly from the geographical standpoint.

A successful association must include in its membership representatives of the various segments of the industry. I found in some cases however that this was not completely so. Some larger suppliers, for example, were not as yet definite in their decision as to what course of action to take. I found that the larger suppliers are anxious to cooperate in association activity, but wanted to make certain that there is a sincere and true intent behind the objectives of the movements they are called upon to support. With certain problems solved in regard to representation, I believe the International group has intentions of satisfying these requirements.

The ultimate in association activity, which was the unanimous voice of all those with whom I spoke, was first that a national association be in some way tied into an international association and then the international association become a part of or associated in some manner with the CSMA, U. S. A. This would encompass all the objectives that the various aerosol minded individuals expressed throughout Europe. It will take time to work out the problems that confront these various groups in Europe, but at the rate they are striving to attain their objectives, I believe that a clear picture and pattern of aerosol activities will reveal itself within the coming year. Until such time, I believe that the CSMA should stay in close contact with their movements, but for the time being, allow them to work out their fundamental problems and finalize their movements. Because of the strides in technical achievements that they are making, and also because they can sincerely contribute eventually to our aerosol thinking, the time will come in the not too distant future when I believe it would be very advantageous for a CSMA cooperative undertaking of some type with an international group in Europe.

In summary, may I state that: 1. The enthusiasm and interest for aero-

(*Turn to Page* 74)

DOES IT PLEASE THE *Lady?*

As a matter of fact, it *must* please the lady if an aerosol is to sell successfully. The very nature of a pressure-packed product makes its odor the *most* important factor in sales appeal and product acceptability.

VAH can help you to please the lady . . .

IN MATTERS OF CREATIVE FRAGRANCE

The VAH perfumers will create for you a distinctive fragrance that is not only a thing of true beauty in itself, but one that is ideally suited to the product, and to the market you intend to influence. You *know* it will be technically right and within the price range you determine. None is better able to serve your fragrance needs than VAH.

IN MATTERS OF AEROSOL TECHNIQUES

The VAH Aerosol Laboratory, excelling in facilities, ability and experience will be happy to guide you in the complete development of your aerosol product. VAH customers enjoy all these services:

- Product Development
- Formulation For Compatability
- New Product Evaluation
- Test Packaging
- Valve and Package Recommendations
- Filling Procedures
- Production Trouble Shooting

If you're thinking of a new aerosol product, think of **VAH!**

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AEROSOLS in review

A DISCUSSION of contract packaging of pressure food products is a feature article in the May issue of *Food Processing*. Written by C. "Pete" Clapp, vice-president of Western Filling Corp., and Karl Robe, associate editor of the magazine, the article points out that contract packaging is "especially appealing to those in the food field who do not want to go through with the entire development program, with its delays and expenses, but want to test market the potential of products."

The article declares that quality control assumes added importance in the packaging of food products. "During production runs at Western Filling, the following list of characteristics are checked: product viscosity; particle size; soluble and insoluble solids; pH; color; flavor; fill temperatures; product fill level; heat exchanger temperature crimp settings; temperature in and out of spin cooler; vacuumizing; internal pressure; leakage; condition of valves after filling."

Included is a brief description of the production line at Western Filling: "Product is mixed, then held in a jacketed 800-gallon stainless steel tank equipped with an agitator. From holding tank the product goes through a finisher, then through a homogenizer.

"Next it flows through a plate-type heat exchanger to a 10-spout, in-line, piston-type filler, where nine ounces of product is filled into washed cans. The valves are then inserted into the cans by hand as the cans enter a two-stage crimper. In the first stage the cans are vacuumized to an average of 20-22 inch reading on cooled can. In the second stage the valve is wedged into the opening and sealed.

"Filled and sealed cans then enter a spin-cooler designed at Western Filling, where they are spin rolled for a specified time to pasteurize interiors of containers and the valve. Next they enter a sterile water-cooled spin cooler, and emerge with contents about 90°F.

"From spin-cooler the cans proceed to gasser-agitators. These in-line machines each collect a row of 12 cans, grasp them between hold-bars, and fill cans with gas to a specified pressure through the can valves while they are being vigorously shaken. Gas automatically shuts off, agitation stops, and the cans are conveyed through a leak-test water tank. As cans emerge from bath, an actuator button is placed on each valve, and at the next station a woman tests each valve by squirting a brief blast of product into a hooded receptacle.

"Cans are then air-dried, labeled, over-capped, and cased. The current line speed of 90 per minute can be increased to the filler rate of 225 by adding more gasser-agitator machines to the line as needed."

•

THE problem of cost reduction in production operations is discussed briefly in the March issue of *American Perfumer* by Dr. Winston H. Reed in his monthly column. As good areas of study in the aerosol plant, Dr. Reed suggests:

(1) Improved materials storage.
(2) Reduction in variety and sizes of containers and valves.
(3) Reduction in the use of odd propellant ratios.
(4) Wider use of preventive maintenance.

Dr. Reed points out that storage areas should be five to seven times the production space, and that containers and valves should have to move the shortest distance within the plant. Careful identification of storage areas, he writes, will help cut down the possibility of expensive mix-ups.

In the same issue, the periodical's other aerosol columnist, Jack Pickthall, quotes T. J. McCarthy, of Elizabeth Arden, who recently said that more effort must be given to making the aerosol package more distinctive so the marketer can offer the public something more distinguished than the conventional aerosol container.

"Mr. McCarthy declared that it is absolutely necessary to bring down the price of the package itself, and to introduce a greater variety of form. This applied to both the metal and glass container. He thought that at the moment the aerosol pack would not replace anything already on the market, although the hair spray could definitely be regarded as added business."

•

AN excellent article on "Nitrogen Aerosols," written by Dr. Francis A. Mina, technical director of Lodes Aerosol Consultants, Inc., New York, appears in the March issue of *Drug and Cosmetic Industry*. After discussing the general application of nitrogen and other compressed gases for various aerosol product types, Dr. Mina discusses the low cost of nitrogen:

"The amount of nitrogen required to dispense the allowable contents of a six-ounce container (the size most commonly used for aerosol toothpaste) is approximately one-half gram per unit. This provides approximately 800 to 900 six-ounce units per pound of nitrogen at an almost negligible cost of approximately $0.00025 per unit."

. . . "The relative insolubility of nitrogen in the various product bases favors its use for aerosolizing non-

the unmistakable Ring of Quality

IN AEROSOL VALVES — You will find the clear, unmistakable ring of quality in Sun Tube Aerosol Valves. Quality bonuses, like the stainless steel spring that is double piloted to give smoother action and prevent cocking — the exclusive electronic checks of each individual valve — and the high quality standards that make it possible for Sun Tube Aerosol Valves to maintain the lowest seepage rate in the whole industry. Investigate.

IN COLLAPSIBLE TUBES — For over 30 years, Sun Tube has been synonymous with the best in collapsible tubes. This is because Sun Tube does everything within its own plants, and thus maintains full quality control of all operations from the initial tool manufacture, through metal fabrication and the handsomely decorated finished piece. Investigate.

Sun Tube
CORPORATION

HILLSIDE 5, N. J.
WAVERLY 3-0400

A Subsidiary of American Can Co.

aerated products. On the other hand, this very advantage provides a serious shortcoming in that no propellant reservoir is available to replenish gas lost during storage, or in the event of accidental discharge of gas while product layer is tilted away from the open end of the dip tube or valve outlet. This problem is not quite as serious in foam products using CO_2 and/or N_2O mixtures since the dissolved portion of these gases would tend to evolve from the product base to reach equilibrium and thus replace any nominal amount of lost gas."

Dr. Mina points out that the problem of accidental discharge of compressed gas is particularly important in dispensing such viscous products (as toothpaste and syrup) and those that have no dip tubes.

"Because of the flow resistance of viscous products, a unit inadvertently stored in other than an upright position is quite likely to lose its entire charge of pressurized nitrogen if the valve is actuated before the dip tube opening is covered by the product base. This difficulty, of course, is minimized in products having a free flowing water or other low-viscosity base."

Dr. Mina warns about valve impaction, pointing out that consideration must be given to the possibility of drying out of the product base in the valve outlet. He warns that this condition can cause impaction and subsequent failure of the unit to dispense the contents uniformly or adequately.

•

THE use of PVP and its copolymers in an aerosol hair fixative "permits the perfumer-chemist to select a fragrance from a much wider variety of odor types than was previosuly possible," declares the April issue of *the Givaudanian*, monthly publication of Givaudan-Delawanna, Inc., New York. This ease in perfuming, the magazine points out, is due to the relatively low odor level of PVP and the minimum amount of added plasticizer necessary.

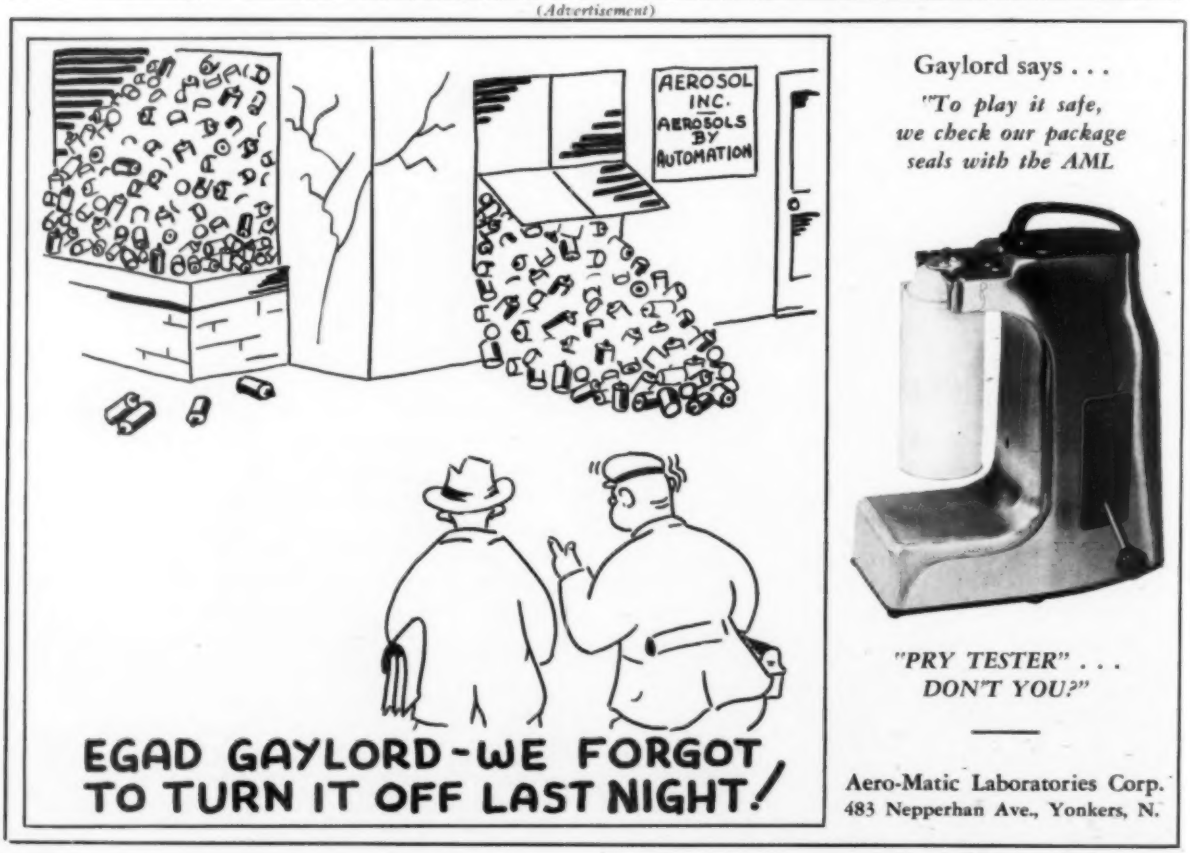
"Hair set formulations may vary considerably, depending on the effect desired when it is sprayed on the hair. The addition of certain of the fatty alcohols such as myristic alcohol, and the use of certain esters such as isopropyl myristate and polyglycols, enhances the plasticizing properties of PVP. Certain of these materials have a tendency to reduce the hygroscopic properties of PVP and its copolymers. If the hair is subjected to humid conditions, the spray will not become matted on the hair. Other products such as ethyl cellulose have been, and are being, used in this product to reduce the hygroscopic properties of the polyvinyl pyrrolidone.

"The use of lanolin or its derivatives may further enhance the formulation. Care, however, should be exercised to insure complete solubility of the lanolin or its derivatives in the formulation.

"In many instances, the concentration of perfume used in an aerosol hair set has been increased, allowing this package to be merchandised as a cologne-hair fixative combination. This adds a definite appeal from the consumer's point of view, and this

(*Continued on Page* 74)

(*Advertisement*)


AEROSOL INC.
AEROSOLS BY AUTOMATION
EGAD GAYLORD - WE FORGOT TO TURN IT OFF LAST NIGHT!
Gaylord says . . .
"To play it safe, we check our package seals with the AML
"PRY TESTER" . . . DON'T YOU?"
Aero-Matic Laboratories Corp.
483 Nepperhan Ave., Yonkers, N.

NEWS of Pressure Packaging

Powr-Pak in Merger

Powr-Pak, Inc. and the Connecticut Chemical Research Corp., both of Bridgeport, Conn., merged last month to form Powr-Pak-ConnChem, Inc. The new company is said to represent the largest organization in the aerosol industry.

The plant facilities made possible by the merger include approximately 90,000 square feet on one floor, seven major production lines with a daily capacity in excess of 200,000 units per shift, and warehouse facilities for millions of cans, packaging materials, and finished goods. Three manufacturing divisions will operate under one roof, but in complete and separate areas. These divisions will produce aerosols for manufacturers of general aerosol products; pharmaceuticals, drugs, cosmetics, and toiletries; and food products.

Edward F. Helfer, president of Powr-Pak, is the president of the new company. Mr. Helfer, who helped to produce the first low pressure aerosol in 1947, was one of the original founders of Connecticut Chemical Research Corp. Jack Schenberg, vice president of Connecticut Chemical, assumes the position of executive vice president of PowrPak-ConnChem.

Helfer Schenberg

Milton Fowkes, director of research at Connecticut Chemical, will be vice president and director of research. Marvin Steinbock, vice president in charge of manufacturing for Connecticut Chemical, is vice president and director of manufacturing for the new company. Charles O. Rader assumes the position of vice president and sales manager. He had been sales manager for Connecticut Chemical.

The firm's new plant, located at 145 Howard Avenue in Bridgeport, opened officially on June 6.

Edwin R. Lasner, formerly assistant to the president of Connecticut Chemical Research Corporation, has been appointed vice-president contract sales. Joseph Zamata, originally purchasing agent of Connecticut Chemical Research Corporation, and recently plant coordinator for Powr-Pak, Inc., has been appointed assistant to the president.

Hazel Bishop Sold

Hazel Bishop, Inc., New York, has been sold by its president, Raymond Spector, to C. & C. Television Corp. Mr. Spector sold his common and preferred stock (making up more than 60% of the company's stock) to C. & C. Television, which is a film distributor.

According to Matthew M. Fox, C. & C. president, the television company will use its accumulated television spot commercial time to promote Hazel Bishop products, which include a number of aerosols.

•

Chemway Names McNamara

Leo J. McNamara has been named administrative vice-president of the Household Products Division of the Chemway Corp., Mountain View, N. J.

•

Pyrethrum Group Names Agent

The pyrethrum growers of Africa, major U. S. suppliers of this widely-used insecticide, have announced the appointment of sales agents in Great Britain and the establishment of a greatly broadened research program in Africa and in Europe.

Biddle Sawyer & Co., Ltd., of London, was named agent for the United Kingdom and Ireland of the Pyrethrum Boards of Kenya and Tanganyika, and SOCOPA (Societe Cooperative des Produits Agricoles) of Belgian Congo—the three principal pyrethrum cultivation areas. At the same time, announcement was made of the establishment of European technical headquarters, named "African Pyrethrum Technical Information Center, Ltd.,55 in England. It will be headed by Dr. T. F. West, with the title of European operations executive.

In Kenya, where there already is in operation the only laboratory devoted exclusively to technical research

Colton to Sell and Manufacture Alpha Aerosol Line

ALPHA Engineering Works Inc., Mt. Prospect, Ill., early last month completed arrangements for the Arthur Colton Co. of Detroit, Mich. to sell, manufacture and service Alpha's line of aerosol filling equipment.

The equipment will be sold under the new trade name "Colton-Alpha," according to a joint announcement by R. B. Stanley, Alpha president, and K. B. Hollidge, Colton executive vice-president. They declared that the Alpha organization will continue its engineering, research, and development programs in the aerosol field.

The Alpha line includes a complete range of pressurized packaging units: single-station and rotary type high speed pressure fillers for use on both fluorinated hydrocarbon and hydrocarbon propellants, nitrogen gassers and testers, rotary shaking and gassing equipment, and single-station and rotary high speed crimpers and vacuum crimpers.

Arthur Colton Co. is a division of Snyder Tool and Engineering Co. and is a major producer of ingredient fillers for all types of packaging applications.

into pyrethrum, Dr. Alan Goldberg has been named director of Scientific Services. Dr. Goldberg is internationally known for his research in chemotherapy and toxicology.

A third appointment announced is that of J. Huntley, an engineer, of Hull, England, as manager of a new plant under construction at Nakuru, Kenya, for the extraction of pyrethrins. Nakuru also is headquarters of the Pyrethrum Board of Kenya and the site of the African laboratory.

•

Avon Sales Up 13% for '58

Sales of Avon Products, Inc., New York, were 13% higher for the first four months of 1958 than for the comparable four month period last year, John A. Ewald, Avon president, told stockholders at the annual meeting held May 19th. The upward sales trend was continuing during May, he reported. In addition to expanding operations in the domestic market, Avon looks for further expansion in the Canadian and foreign market. "We plan within the next two years to commence selling in Brazil, Great Britain and Germany," he said. In recent years Avon has gone into Puerto Rico, Cuba and Venezuela, and more recently into Mexico.

C. Alexander

K. Michel

N. Marchak

Sun Tube Elects 3 VP's

Three executives of Sun Tube Corp., New York, a subsidiary of American Can Company, have been elected to newly created posts as vice presidents of the company.

They are Nicholas Marchak, who is in charge of commercial development and research; Claude L. Alexander, in charge of sales, advertising and sales promotion, and Kenneth G. Michel, in charge of manufacturing at the firm's Hillside and Washington, N. J., plants.

Salesmen's Assn. '58 Dates

The Salesmen's Association of the American Chemical Industry will hold its annual dinner dance on Nov. 7 at New York's Waldorf-Astoria Hotel, and its annual Christmas party on Dec. 17 at the same hotel, according to Paul E. McCoy of American Potash & Chemical Corp., chairman of the Entertainment Committee.

Further details on the meeting program will be announced later.

Babbitt Appoints Three

B. T. Babbitt Inc., New York, has announced the appointment of three men to head its newly formed division, the marketing service group. Kenneth F. Maisch, former promotion manager of Wilbert Products Co., who joined Babbitt in 1955, will continue as sales promotion manager. Allan Wikman, formerly of the Family Products Division of the Warner-Lambert Pharmaceutical Co., became new products manager.

•

Enters Fluorocarbon Field

The Union Carbide Chemicals Co., Division of Union Carbide Corp., New York, will begin production of fluorocarbon propellants and refrigerants next fall at its Institute, W. Va., plant. The brand name "Ucon" has been selected as the trade mark under which the company's fluorocarbon propellants will be marketed.

The company has set up an Aerosol Technical Service Laboratory in Westchester County, New York, to conduct application research and provide technical service to aerosol fillers.

A fluorocarbons unit at the Institute, W. Va., plant is under construction and will have a capacity of 50 million pounds per year of Ucon fluorocarbons.

NEW FLUOROCARBONS TEAM of Union Carbide includes John R. Hulten, Manager—Fluorocarbons Sales (seated); Arthur B. Chivvis (center), of the fluorocarbons propellants sales staff, and Elbert (Rusty) Husted, Sales Manager—Fluorocarbons Propellants.

Form Finnish Aerosol Assn.

A Finnish Aerosol Association was organized at a meeting in Helsinki, Finland, April 26th. K. K. Talvitie of Berner Osakeyhtio, one of the leading firms in the Finnish aerosol market, was elected first president of the new association. Members of the association represent all branches of the aerosol industry in Finland, including fillers, marketers, manufacturers of containers, valves, propellants, etc.

Membership in the association is on an individual, rather than on a company basis. The primary aim of the new group will be to promote the use of aerosols in Finland by all possible means.

Further details on the new group will be reported in our next issue, which will also carry an article by Mr. Talvitie giving a brief review of the aerosol industry in Finland.

A. O. Samuels Resigns Executive Position With Babbitt

A. O. SAMUELS, founder and president of Connecticut Chemical Research Corp., Bridgeport, and its subsidiaries (Bostwick Laboratories and U. S. Packaging Corp.), which merged 20 months ago with B. T. Babbitt Inc. has submitted his resignation as a member of both the executive committee and the board of directors of B. T. Babbitt.

The resignation, also to include Mr. Samuels' affiliation with the aerosol companies, was effective May 1. However, the announcement said that Mr. Samuels will remain in a consulting capacity to Marshall Lachner, Babbitt president, "for some time". According to Mr. Samuels, the resignation is part of an overall plan for reducing his responsibilities, a plan originally outlined by Mr. Samuels at the time of the merger in Sept. 1956.

In accepting Mr. Samuel's resignation, Mr. Lachner announced that the sales management of the aerosol division of Babbitt is being turned over to Jack Schenberg.

Mr. Samuels emphasized that he is not resigning completely from business life, and has declared that he intends devoting at least part of his time to management consulting and business reorganization in the aerosol and other industries. He has opened a temporary office in his home at Old Battery Road, Bridgeport, Conn., before opening a New York office in the near future.

Formerly founder and president of Samson-United Corp., Rochester, N. Y., manufacturers of small electrical household appliances, and later vice-president and general manager of Casco Products Corp., Bridgeport manufacturers of auto accessories and home appliances, Mr. Samuels has been a pioneer in the aerosol field since founding C.C.R.C. in 1947. His contributions to the industry, include: pioneer developments in coated glass bottles for aerosol use, the development and design of specialized valves, the initiation of "Polysols" as the first use of non-liquefied gases to propel products which could not be effectively propelled with conventional aerosol propellants, and the early development of aluminum con-

A. O. Samuels

tainers and special design of tin containers. His most recent development is the eight-ounce tall "Slim Jim" can. He has been closely associated with Lawrence Ward of Hampton Products, Portland, Penna. in the development of metered valves for aerosol products.

•

Aerosol Paints on Rise

The American Can Co., New York, a leading manufacturer of aerosol cans has reported that the paint industry is having a 50-million-can year for aerosol paints. By comparison, production last year amounted to 35 million cans. In 1956 it was 22.5 million and in 1955, only nine million.

There are currently about 25 leading paint manufacturers turning out spray paints. A few years ago, most of the makers of aerosol paints were new to the business and had not yet required a "name." Also playing a role in the growth of this product type is the fact that they are now being stocked as regular items in most paint stores, the report indicates. Previously they had been carried primarily in art and specialty stores and missed the eye of many paint buyers.

Robert Hollister, Canco's assistant national sales manager for pressure cans, attributes much of the increase in popularity of spray paints to his company's 1956 development of the 16-ounce pressure paint cans, with greater spraying capacity. Only six and 12-ounce cans were on the market before 1956. Spray paints currently hold fifth place among pressure products, following hair sprays, room deodorants, insecticides, and shaving creams.

•

Lanvin Purchases Antoine

Antoine de Paris, a cosmetic subsidiary of Lightfoot Shultz division of A-S-R Products, New York, has been acquired by Lanvin Parfums, a leading perfume marketer. The cosmetic line of Antoine de Paris includes "Hair Fixative" and other aerosol products.

The transaction does not include the 64 Antoine beauty salons throughout the U. S., which will, however, be serviced with Antoine products distributed by the Lanvin sales force.

•

Bridgeport Names President

Bridgeport Brass Co., Bridgeport, recently elected Austin R. Zender president and promoted three other executives to vice president. Mr. Zender, who was formerly executive vice-president, succeeds Herman W. Steinkraus, who will continue as board chairman, general manager, and chief executive officer.

The new vice-presidents are Drummond C. Bell, Gilbert C. Mott, and Raymond P. Quadt. To be vice-president in charge of operations the company named Richard W. Summey, who had been vice-president, manufacturing. Robert M. Feemster, chairman of the executive committee of Dow Jones & Co., was elected to the board of directors.

•

Aerosol Rifle Spray

Parker-Hale Ltd., London, has begun packaging its "Young's .303 Cleaner and Nitro-Solvent" in an aerosol spray container, reports *Field*, English outdoors magazine. "The fine mist of oil that the new container ejects is powerful enough to reach the length of a gun barrel, so for the final oiling one can now point the spray down the barrel, press the button, and the job is done."

Perfume Compounds for aerosol colognes

- modern
- classic
- floral
- French

by

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New York 1, New York

Theimer Speaks to N. J. Group

Dr. Ernst T. Theimer, Director of Research, van Ameringen - Haebler, Inc., New York, manufacturer of perfume and flavor materials, recently gave a talk on the "Chemistry of Perfume Raw Materials" at a meeting of the Raritan Valley Subsection of the American Chemical Society at Rutgers University.

"Over the past half century", Dr. Theimer stated, "the variety of organic chemicals used in the manufacture of perfume compounds has become greater with the discovery of new reactions and with the availability of new raw materials. Products originally isolated from essential oils have been replaced in many cases by similar or identical materials prepared synthetically. In addition, new chemicals not found in nature are being used to a greater extent in modern perfume creations."

van Ameringen-Haebler, Inc., with laboratories and factories at Union Beach and Elizabeth, N. J., and in Paris, France, has pioneered in the development and production of many new synthetic chemicals that are being widely used in perfume materials.

•

German Packaging Show

The first German international packaging exposition, called "INTERPACK," held early in March in Dusseldorf, was probably the largest and best attended European packaging show of the year. A registered attendance of approximately 70,000 visitors from some 42 different countries was reported.

One of the highlights of the show was the exhibit of Precision Valve International, Zurich, which invited exhibition visitors to sample pressurized coffee and chocolate from nitrogen powered containers. These samples were specially prepared by Precision Valve Co., Yonkers, N. Y., Precision Valve International affiliate, and were flown directly to Dusseldorf for the exhibit. This exhibit attracted favorable attention in the international trade press, particularly in England. (*Packaging Review* and *Food Trade Review* both devoted considerable editorial space to the PVI booth.)

ATI, Western Sign Pact

John L. Marana, left, president of Western Filling Corp., Los Angeles, Calif., and H. R. Shepherd, president of Aerosol Techniques, Inc., of Bridgeport, Conn., shake hands after signing a new collaborative agreement for the two aerosol loading firms. The agreement calls for a consolidation of the production and research faciilties and resources of the two companies. The administrative and other functions will remain separate.

INDUSTRY CALENDAR

June 5—Toilet Goods Association, Scientific Section. Hotel Waldorf-Astoria, New York, N. Y.

June 25-29—Toilet Goods Association, Poland Spring House, Poland, Me.

Aug. 11-13—Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco

Oct. 28-29 Northwest Garden Supply Trade Show, Portland, Oregon

Oct. 29-31—National Agricultural Chemicals Association, Bon Aire Hotel, Augusta, Georgia

Nov. 13-14—Canadian Chemical Specialties Manufacturers, 1st annual meeting, Queen Elizabeth Hotel, Montreal, Canada

Dec. 9-11—Chemical Specialties Manufacturers Association, 45th annual meeting, Commodore Hotel, New York, N. Y.

Colgate Appoints Two

The Colgate-Palmolive Co., New York, has named two former advertising executives of the Leo Burnett Advertising Agency to its Household Products Division. Donald A. Wells who had been a vice-president of Burnett, was appointed general products manager of the division and will supervise the development of marketing plans, advertising, and merchandising.

Robert I. Angelus, a Burnett account executive, will be responsible for the advertising and merchandising of "Kan Kil" and a number of other Colgate products.

•

Canco Expands in South

In a move to expand its services to the rapidly growing food and nonfood canning and packaging industries in the South, American Can Co., New York, has established a Southern sales area with headquarters at New Orleans. The new area includes the Carolinas, Georgia, Florida, Alabama, Mississippi, Louisiana, Tennessee, Missouri, Arkansas, Texas, Kansas, Oklahoma, and parts of Illinois.

William V. Lyons, formerly a Canco district sales manager at New Orleans and Baltimore, will be manager of the new area, and R. C. Coleman will be assistant area manager. The new area will include district sales offices at Houston and Arlington, Tex., New Orleans, Kansas City, St. Louis, Tampa, and Atlanta.

•

Tussy Names Schliemann

William P. Schliemann, formerly assistant director of eastern operations for Helene Curtis Industries, has been appointed assistant sales manager for the Tussy Division of Lehn & Fink, New York. He will be responsible for coordination of the division's merchandising and sales activities and will supervise marketing studies and sales to all military post exchanges.

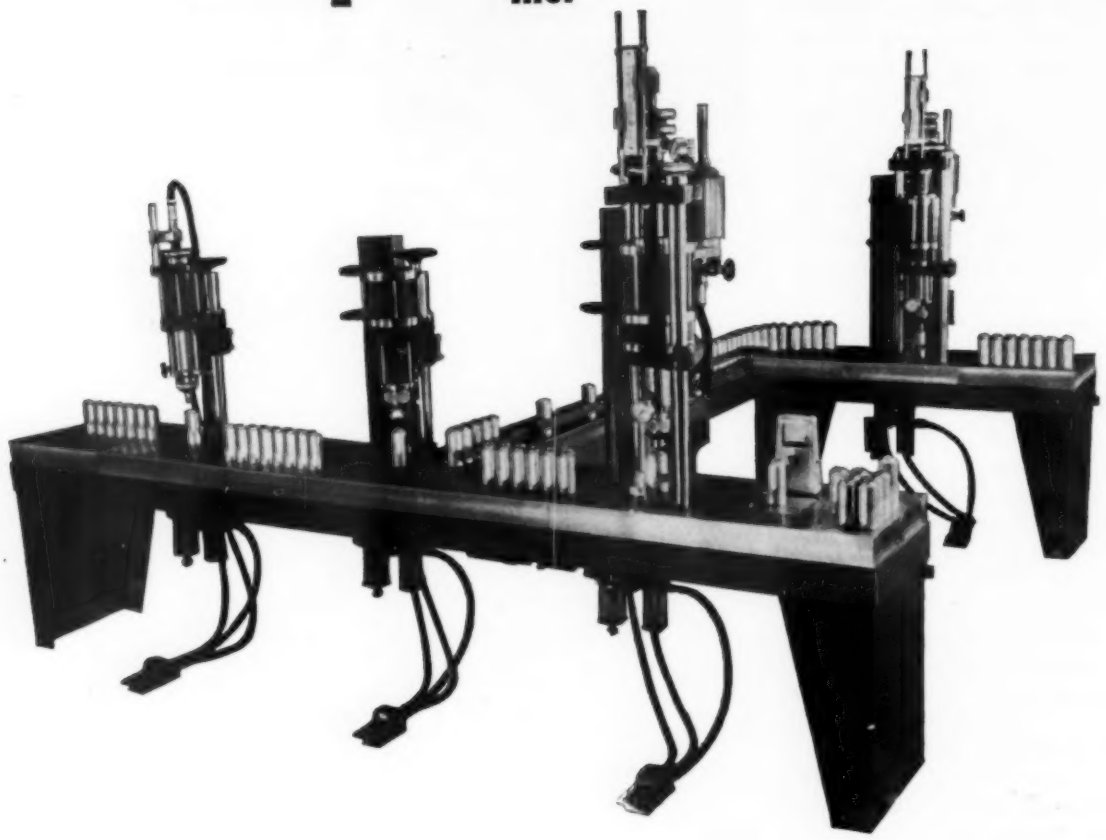
•

Goldemberg Joins Shulton

Robert L. Goldemberg, formerly a senior chemist with Coty, Inc., has joined Shulton, Inc., Clifton, N. J., as a project leader in its toiletries research laboratories.

druk pak inc.

Supplying internationally for aerosols.



druk pak

Manufacturer:

Johann Waldherr,
Machine Builder
Kafertaler Str. 162,
Mannheim, Germany

Sales Representatives:

druk-pak, inc.,
Merkur Str. 36,
Zurich 7, Switzerland

Publishers of "European Aerosol Survey" a quarterly periodical and "Aerosol Packaging" an Exposé covering all aspects of the aerosol package.

A WM-DP semi-automatic Pressure Filling Unit with Product Filler and Valve Clincher serving two Propellant Chargers. These sturdy and efficient machines cover your loading requirements, large or small. Some details on the

Propellant Charger WM-DP 340:

Stainless Charging Cylinder, adjustable capacity— 5 to 375 g.
Charge Tolerance, under 100 g, fractional—over ± 1 g.
Operating Pressure, according to valve 6 to 8 Atü.
Gas Loss, less than 1%
Capacity: The above line with two Propellant, Chargers does over 8500 twelve ounce units per 8 hr. day. In six ounce units, according to valve and charge, 10 to 13 per minute.

Other WM-DP Products:

Magnetic Chain Link and Tank Type Test Baths, Conveyor Lines and Tracks, Mufflers and Fast Exhaust Units, Propellant Pumps, Purgers, Complete Line of Laboratory Equipment, etc.

Valves for metal cans, glass bottles, foams and small (50 mlg) metered quantities. All valves are quick gassing, pressure fillable.

Concentrates, a large line of tested products, some for dilution up to 1:9.

Aerosol Research Laboratory Dedicated at Columbia University

A formal opening of the new aerosol research laboratory of the College of Pharmacy, Columbia University are, left to right, Leo Roon, chairman of the board of trustees of the college; H. R. Shepherd, president of Aerosol Techniques, Inc., through whose grant the laboratory was installed; Dean E. Emerson Leuallen of the college; Dr. Leonard A. Scheele, president of Warner-Chilcott Laboratories and former Surgeon General of the U. S., guest speaker; and Dr. Joseph L. Kanig of the college faculty, who will be in charge of the laboratory.

MORE than 200 persons, most of them from the pharmaceutical and aerosol industries, attended the opening of the new aerosol research laboratory at the Columbia University College of Pharmacy Wednesday afternoon, April 30. The laboratory was made possible by a grant from Aerosol Techniques, Inc., of Bridgeport.

Dr. Leonard A. Scheele, former Surgeon General of the United States and now president of Warner-Chilcott Laboratories, dedicated the new laboratory and spoke on the need for research in academic institutions. "Research flows from men and from brains," he said. "It is imperative, therefore, that our teaching institutions also grow in strength and that they be adequately supported both in terms of physical plant and teachers. One must be careful in the present world setting not to overemphasize the urgent need for training physicists, mathematicians, physical chemists and related specialists without giving proper emphasis to the need for more teachers and training more people in the natural sciences related to biology."

Leo Roon, chairman of the board of trustees of the college, in introducing Dr. Scheele, referred to the development program of the college, which includes plans to extend the services of the College to the profession of pharmacy and the pharmaceutical industry both with the Bobst-Columbia Plan for Pharmaceutical Education and its proposed research institute.

The laboratory, under the direction of Professor Joseph L. Kanig of the faculty, will be utilized as a part of the graduate program for research projects involving the development of pharmaceutical pressurized dosage forms. A major portion of the proposed research will be devoted to identifying and studying the variables affecting the stability and efficiency of medication in aerosol form.

•

Strobel Plant Burns

The plant of Strobel Products Co., Louisville, Kentucky, custom filler, was nearly totally destroyed March 18 by a fire that caused damage estimated at $25,000 to $30,000. The company produces a line of shoe polishes, paints, deodorants, and other products.

By salvaging some of its equipment, and bringing in new units, Strobel was able to resume production in 10 days.

•

Crown Appoints Aleck

Clyde F. Aleck of San Mateo, Calif., has been named northern district sales manager by Crown Cork and Seal Co., Philadelphia. In this newly created post, he will be responsible for sales of Crown's cans, closures and machinery in the area of Northern California, Oregon, Washington, Idaho, Montana, Utah, Alaska and Hawaii.

Mr. Aleck has been associated with the firm since 1944. He will make his headquarters in San Francisco.

Crown Cork and Seal Co. is a principal supplier of aerosol containers.

Chess, Schiaparelli Combine

A single sales force will be used to distribute product lines of Mary Chess Inc., New York, with that of its recently-acquired affiliate, Parfums Schiaparelli, it was announced last month by Joseph A. Danilek, president of Mary Chess. Both firms market aerosol perfumes and colognes.

With the exception of this realignment of sales assignments, no changes in the operation of either company are currently planned, Mr. Danilek said. In announcing the purchase of the Schiaparelli organization, he stressed Mary Chess' intention of "keeping intact the personalities of both fragrance lines."

•

Western Packaging Show

A new packaging and materials handling clinic will be given in conjunction with the Western Packaging and Materials Handling Exposition, scheduled to be held in San Francisco's Civic Auditorium on Aug. 11-13. The clinic will be sponsored by the educational committee of the Western Packaging Association, and is scheduled for the second day (Aug. 12) of the three day exposition.

There will be no charge to attend the clinic, which will be open to all exposition registrants. It will include a question-and-answer period.

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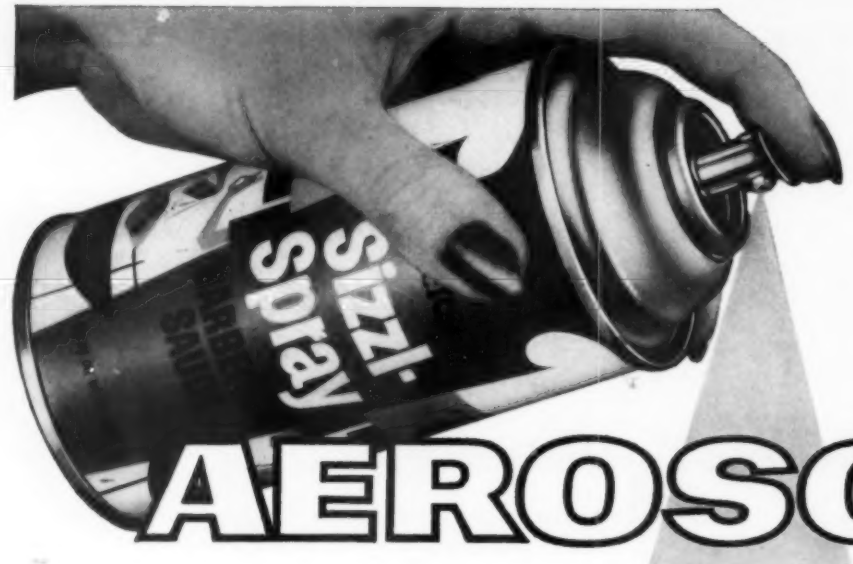
Shulton Elects O'Brien

William H. O'Brien, vice-president for finance, has been elected to the board of directors of Shulton, Inc., Clifton, N. J.

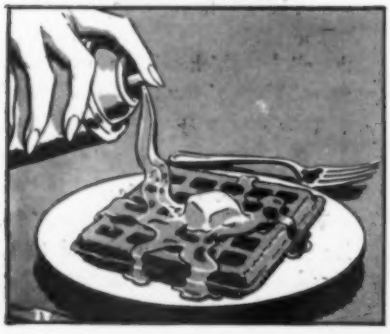


Pioneered

AEROSOLS

BARBECUE SAUCE
Barbecue sauce achieves new convenience and ease of use in an aerosol can by Continental. Barbecue sauce is dispensed in a spray pattern.

MAPLE SYRUP

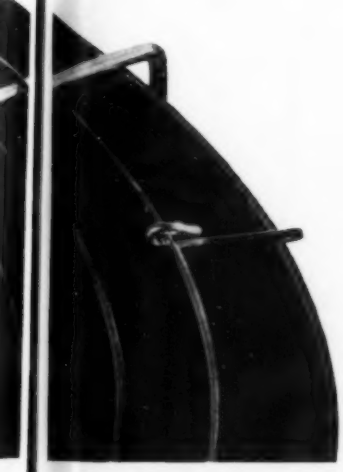


CHOCOLATE SYRUP

SALAD OIL

and perfected by
Continental Can...

FOR FOOD



New Continental Development* ushers in new era of food packaging!

*In cooperation with Andersen Foods Co., division of Heublein, Inc., and Western Filling Company.

New food products get "push-button" dispensing! New Continental aerosol cans dispense either oil or water based food products in a *foam, spray, or stream pattern.*

This Continental development brings food packers to the threshold of a spectacular new market. Push-button foods from barbecue sauce to chocolate syrup are already on the market or will soon appear. Sales of aerosol foods promise to surpass the amazing success of non-food aerosols which skyrocketed to 350 million units in 1957.

Numerous new food products are now being tested at Continental's new Research and Development Center. Fillers and valve and equipment suppliers have cooperated to make this packaging break-through a commercial reality. For an appraisal of your food product's potential in an aerosol food can, call your nearest Continental representative.

CONTINENTAL CAN COMPANY

Eastern Division: 100 East 42nd Street, New York 17
Central Division: 135 South La Salle Street, Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare Street, Montreal, Que.

CHEESE SPREAD

MERINGUE TOPPING

YOUR PRODUCT?

Aeratom Names U.K. Agent

Aeratom AG., Rapperswil, Switzerland, a leading European aerosol filling machine manufacturer, has named Ideal Packagings Ltd., 1 Shrewsbury Road, N.W. 10, England, to represent it in the United Kingdom market. Aeratom's equipment line includes everything from small laboratory-type fillers and crimpers to a large pressure unit with a capacity of 10,000 aerosol containers per eight-hour shift.

•

Kerr Changes Firm Name

Robert J. Kerr Chemicals Inc., Park Ridge, Ill., aerosol filler and marketer, recently changed its firm name to Kerr Chemicals Inc.

•

New Bandage Product

"Neo-Band," a new aerosol bandage spray impregnated with neomycin, has been developed by Rowell Laboratories, Baudette, Minn. When it is sprayed onto body surfaces, it deposits a thin plastic film on the skin. This film is water soluble and formulated so that air may penetrate it.

•

Babbitt Names Thatcher

B. T. Babbitt, Inc., New York manufacturers of household cleaning products, has announced the election of Russell W. Thatcher as administrative vice-president and director of the company. He was formerly administrative assistant to the president.

Before coming to Babbitt at the end of 1957, Mr. Thatcher was with the Colgate-Palmolive Co. as manager of the Kirkman Division.

•

Perry Bros. Names Hogan

Perry Bros., Inc., Woodside, N. Y., manufacturing perfume chemists, has announced the appointment of Ray Hogan to its New York sales staff. Mr. Hogan has a background in the perfume compound and essential oil industry, through his association with Roure-Dupont and with Rhodia, Inc. for several years.

Brockway Glass Elects

The Brockway Glass Co., Brockway, Pa., last month elected G. A. Mengle board chairman and chief executive officer. Mr. Mengle has been president of the company, which produces glass containers for the aerosol industry, since 1949.

At the same time the company announced the election of Finley B. Hess, executive vice-president, to succeed Mr. Mengle as president.

•

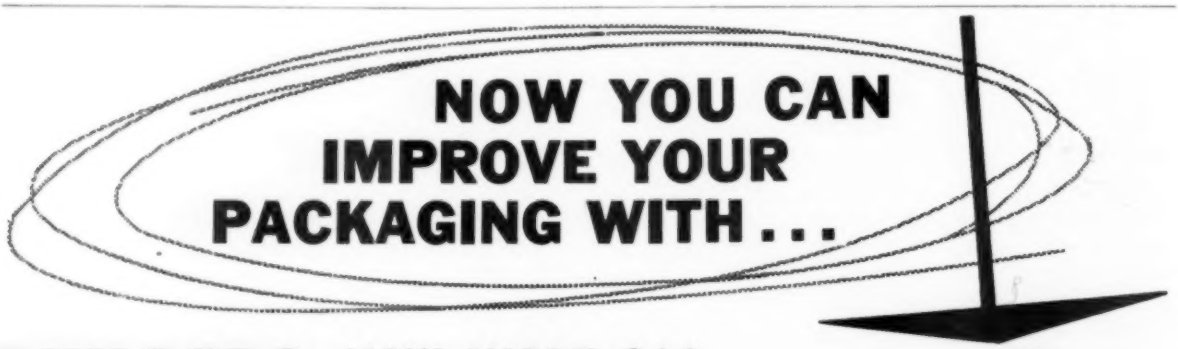
Chemo Puro Names Ries

Chemo Puro Manufacturing Corp., Newark, N. J. supplier of dermatological chemicals to the aerosol industry, has named Peter Ries as its eastern sales representative. He succeeds K. S. Kohorn, who has retired.

•

Pfizer Elects J. P. Smith

J. Philip Smith, general manager of the Chemical Division of Charles Pfizer & Co., Brooklyn, N. Y., has been elected to the company's board of directors.



BUILDERS NEW INERT GAS FILLING SYSTEM

Builders outstanding & easy to operate system dispenses products such as toothpaste, shaving cream, beauty cream, adhesives, food products or any other viscous type liquid.

BUILDERS INERT GAS FILLING SYSTEM FEATURES:

- Dispenses Gentle Flow
- Insures Smooth, Uniform Dispensing
- No Mess — No Waste
- Permits Uniform Gassing
- Production Rate of approximately 10 per minute.

3 Easy Steps to Better Filling:

1) Fill your Product
2) Cap Can
3) Pressurize

BUILDERS SHEET METAL WORKS Inc. manufactures a complete line of AEROSOL LABORATORY EQUIPMENT.

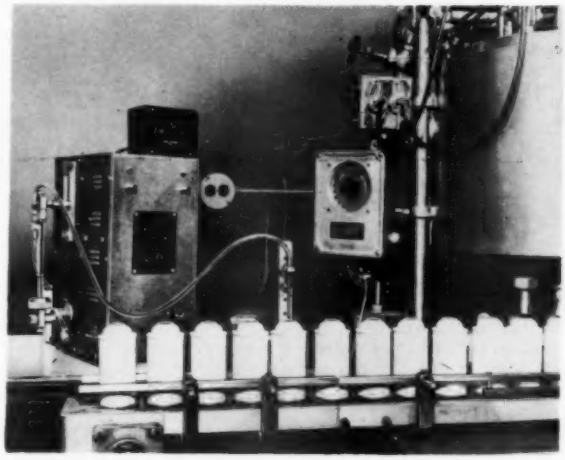
Also, BUILDERS will manufacture to your own specifications any job connected with metal work for the Aerosol Field.

Additional Information Will be Mailed on Request.

BUILDERS CAnal 6-5390 CAnal 6-5398
SHEET METAL WORKS, Inc.
108 WOOSTER STREET NEW YORK 12, N. Y.

Equipment—Processes—Bulletins—

National Instrument Unveils New Automatic Filler



A new, completely automatic concentrate or propellant filler has been announced by the National Instrument Co., Baltimore. Called the "DABC Filamatic Filler," the unit can be attached in minutes to any standard, Geneva drive conveyor.

It is available in a variety of models to provide filling speeds up to 120 per minute and a volume range from one dram to 16 ounces. The filling cycle is initiated by a cable-connected micro switch which plugs into a mating outlet on the "Filamatic." A pre-set volume of liquid will be dispensed each time an empty container actuates the micro switch. This filling cycle will not repeat until the filled container moves ahead and is replaced by an unfilled one.

The "Filamatic" incorporates an electronically controlled, variable speed drive that permits the filling speed to be adjusted from six to 120 fills per minute. The volume of fill is regulated by means of a micrometer dial graduated in increments of 0.001 inches. A positive displacement piston pump provides a reported filling accuracy of better than 1%.

Additional data on the unit is available by writing directly to the company at 2701 Rockwood Ave., Baltimore 2, Md.

Plastic Valve Operator

A low cost, all-plastic molded valve operator which contains no metallic parts has been developed by Chemtrol, a division of Tapered Air Products, Lynwood, Calif. This valve operator, a component for contemplated or existing plastic piping systems carrying corrosive liquids is made available for the first time by any manufacturer, according to the company.

The new valve operator is designed for use in most instances where metal operators are now employed, and its initial cost is a fraction of that represented by its metal counterpart. These include hydro-pneumatic, servo or remote systems as well as enclosed or automatic systems.

Features which make the "Chemtrol" valve operator particularly applicable for plastic piping carrying corrosive fluids are: unlimited service life as evidenced by the fact the operator is corrosive resistant both *externally* and *internally* which eliminates degradation in service from either electrolysis, corrosion or erosion; it is small and lightweight—approximately one-tenth the weight of its metal counterpart; and it is easily disassembled for cleaning or part replacement.

•

Plastic Laboratory Ware

A complete line of plastic laboratory ware, to be distributed by Builder's Sheet Metal Works, Inc., New York, is described in a new 20-page illustrated catalogue. The line includes beakers, bottles, carboys, tubes, flasks, funnels, tubing, valves, stopcocks, and various other laboratory utensils.

Included in the booklet is a chemical resistance chart, indicating the relative resistance to various reagents of the materials used in the laboratory wares. These materials include polyethylene, polyurethane, polypropylene, polyvinyl, and nlyon resins.

Copies of the catalogue are available by writing to the company at 108 Wooster Street, New York 12.

•

New Carton Stapler

The new "Clip-Top" pneumatic packer, which closes filled cartons from the outside with large-size staple clips, has been announced by the Container Stapling Corp., Herrin, Ill. In addition, the machine sets-up empty containers, and is said to seal an ordinary carton in a few seconds for less than one-third of one cent.

The adjustable anvil of the unit staples A, B, or C flute corrugated board. It has double internal return springs.

•

New Evans Booklet

For the manufacturer who is having trouble selling a new consumer product or keeping an old product popular—a pamphlet just published by Evans Research and Development Corp. is designed to provide useful information. The booklet, "A New Concept in Consumer Research" describes the latest expansion in services at this New York independent industrial research laboratory.

A pilot panel for consumer products testing is the unique feature of the Evans Research Home Economics Section. The scientific training of the panel permits early recognition of hidden properties that can ruin a product's saleability. Other special services are also described in the new publication, copies of which may be obtained by request to the Development Department, Evans Research, 250 E. 43rd Street, New York 17, New York.

•

D&O Masking Agent

The Industrial Odorant Laboratories of Dodge & Olcott, Inc., New York, have just announced the development of a new, all purpose masking agent for "difficult deodorizing." Named "A-to-Z" Odor Mask, the new compound is the product of extensive basic research on the subject of odor masking, plus years of practical experience in the intricacies of indus-

trial perfuming. "A-to-Z" Odor Mask is available in four different forms, each providing a specific end-fragrance effect. These include the following types: fresh mint; fruity; clean and sharp; fresh, outdoor. Trial quantities of "A-to-Z" Odor Mask are available upon request to the company at 180 Varick Street, New York 14.

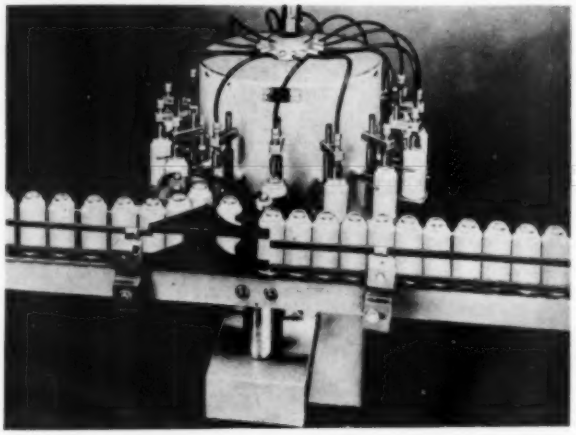
•

Food Propellant Available

The "Freon Products Division" of E. I. du Pont de Nemours and Co., Wilmington, has announced that its new food propellant, "Freon C318" is available to "qualified food laboratories in development quantities." The new propellant is a saturated perfluorocarbon which is said to be stable to hydrolysis over a broad pH range.

Results of DuPont's toxicity tests at its Haskell Laboratory will be made available to the Food and Drug Administration later this year, the company has announced.

Alpha Introduces New Aerosol Nitrogen Gassing Machine



The new Alpha unit is designed especially for high-speed production.

The Alpha Engineering Works, Inc., Mt. Prospect, Ill., has announced a new machine for charging aerosol containers with nitrogen or other compressed gases. Called the "220 Roto-Gas," the machine is designed especially for fast charging of containers filled with liquid or semi-liquid

Toothpaste, syrup, sauces, vitamin preparations, and batter are some of the heavier liquids that can be packaged and gassed with the new machine. Semi-liquids such as butter and cheese may also be gassed at a rate of up to 120 cans per minute.

The entire feed cycle is automatic and the rotary head permits handling high volume in an extremely compact area. Conveyors are supplied in whatever length is required relative to the overall production line. Further information on the unit can be obtained by writing directly to the company at 802 West Central Road, Mt. Prospect.

•

Drop Chlorothene Price

The Dow Chemical Co., Midland, Mich., announced late last month a price reduction of one-cent a pound on Chlorothene, Dow 1,1,1-trichloroethane a solvent. This brings the price down to .1375 per pound in tank car quantities.

Chlorothene is used in the aerosol industry as a vapor depressant.

•

New "Isceon" Booklet

Imperial Smelting Corp., Ltd., London, has issued a new manual on its "Isceon" range of aerosol propellants. The 133-page book was prepared by the corporation's research department and includes much information on physical and chemical properties, production, analytical methods, storage and handling, safety precautions, and various product applications.

The booklet points out that Imperial

SUN-LAC INC.
"Successful through Service"
274 LAFAYETTE ST., NEWARK 5, N. J.

Aerosol Packaging ON

Cosmetics, Creams, Foams, Perfumes, Powders, Household Items, Insecticides, Industrial Products and Plastic Sprays.

We formulate and develop new products. Quality controlled productions—bulk storage facilities, pressure & "Cold Fill" facilities. Special plan for companies requiring national distribution. We supply samples and do experimental work.

Write or phone MA 3-7727 for full information.

Powders • Liquids • Emulsions

Smelting prefers the pronunciation "Ice-ons" for the propellants. With the booklet a special transparent ruler is provided for making calculations from a set of nomagraphs on the density, vapor pressure, and viscosity of mixtures of the two most commonly used "Isceons". Copies of the book are available by writing to the company at 37 Dover Street, London W.1., England.

•

Anchor Marks Milestone

Anchor Plastics Co. Inc., New York, has produced its 250,000,000th foot of Aeroflex "P" Tubing, enough to circle the earth at the equator twice.

To celebrate the event, Richard A. Fisch, president of the company, was presented with a spool containing the quarter-billionth foot by Robert Marx, advertising manager. Anchor Plastics started producing dip tubes for use in aerosols, atomizers, squeeze bottles, and lotion pumps early in 1951.

•

Lanolin Expands Line

Lanolin Plus, Chicago, has expanded its aerosol line through acquisition of the cosmetic line of Diversified Drug Associates, Newark, N. J. Lanolin Plus acquired both the cosmetic line through the election of Morton Edell, owner of Diversified Drug, to be president. Included in the line is "Tint 'n Set", a leading aerosol hair coloring.

•

Wheaton Brochure Available

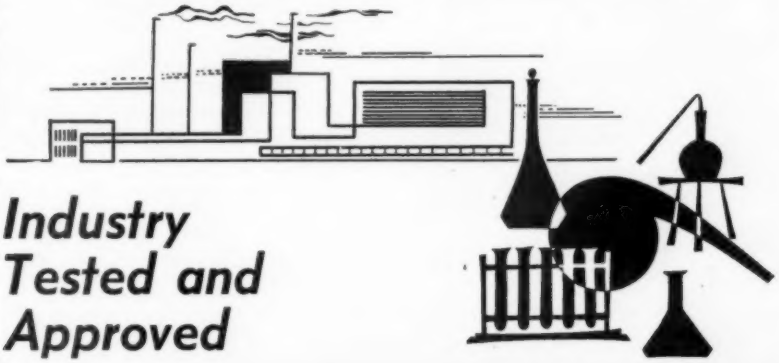
A new brochure on plastic-coated glass containers has been issued by the Wheaton Plastics Co., Millville, N. J. Designed primarily as a tool for aerosol packagers of food, drug, and cosmetic items, the information in the bulletin is also designed for the uninitiated, and contains several diagrams of the basic functioning of an aerosol product.

Illustrated in four-color pictures in the booklet are Wheaton's complete line of containers, closures, etc. Copies of the brochure are available by writing directly to the company.

Nitrogen Tank Bulletin

An illustrated technical bulletin describing various nitrogen tank installations available has been issued by Ohio Chemical & Surgical Equipment Co. Division of Air Reduction Co., Madison, Wisc. It gives specifications and capacity for a variety of nitrogen installations, most of which are applicable to the aerosol industry. Copies may be obtained by writing the company at 1400 East Washington Avenue, Madison 10, Wisc.

...aerosol
REFRIGERATION...



Industry Tested and Approved

Model #1685-1
Propellant
& Concentrate Test
Cabinet Installed at
Dodge & Olcott

We build to your Specifications.

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REFRIGERATION
228 Montgomery Street
Bloomfield, New Jersey
Pilgrim 3-0634

SIMPLICITY

is the essence of *good*

AEROSOL DESIGN

OEL

AEROSOL VALVES have only THREE PARTS

OEL AEROSOL VALVES are noted for simplicity of design and uniformity. They are used on many well-known spray and foam products. The same valve is used for both pressure and cold filling. The unique rubber diaphragm insures accurate sealing, freedom from clogging, and positive action.

PRINCIPAL ADVANTAGES ARE:

1. **Faster filling in pressure loading.**
2. **Minimum propellent loss.**
3. **Uniform flow rates due to "above-the-valve" control.**
4. **Safer with inflammable materials.**
5. **Simplified inventory control due to universal valve.**
6. **Mechanical break-up dispensing at no premium.**
7. **Adaptable for products pressurized with nitrogen.**

Let us send you samples for testing with your product. Just specify container size and dispensing fitments desired.

We are also manufacturers of precision equipment for pressure filling of aerosol containers.

OIL EQUIPMENT LABORATORIES, INC. **600 PEARL STREET ELIZABETH, NEW JERSEY**

"Gives Us an Emulsion of Very Fine and Uniform Particle Size without Homogenizing"

That's the comment of a large cosmetic manufacturer on the results they are getting with

ABBÉ DISPERSALL MIXERS

It points up the job that this Mixer does in breaking up and dispersing liquid globules and agglomerations of solids *in addition* to much faster and more thorough mixing.

If you are interested in making *your* mixing operations a ONE-stage process, write for a copy of Catalog 78.

Address Dept. 36

The mix is pulled down through the rapidly rotating milling element with the cupped rotor-stator. Here impact and shear break up agglomerations of solids and liquid globules to speed up the dispersion of the mix.

abbé ENGINEERING CO. • 50 CHURCH STREET NEW YORK 7, N. Y.

Designers and Manufacturers of

Ball Pebble and Jar Mills • Pulverizers • Sifters • Cutters • Mixers

Flemming Elected to Head Canadian Chemical Mfrs.

GEORGE E. FLEMMING, of Guardian Chemical & Equipment Co., Ltd., Montreal, has been elected president of the Canadian Chemical Specialties Manufacturers Association at a special meeting of the association. CCSMA, which will be modeled after the American CSMA, held its first formal session March 24 in Toronto.

The new group will offer services to member-firms in six divisions: aerosols; soaps, detergents and sanitary chemical products; waxes and floor finishes; disinfecting and sanitizing chemicals; insecticides; and automotive.

Other officers of the association are: 1st vice-president—G. H. Wood, G. H. Wood and Co. Ltd., Toronto; 2nd vice-president—A. Robins, Cartier Chemical Co. Ltd., Lachine, Que.; secretary—R. L. Jones, Colgate-Palmolive Ltd., Toronto; and treasurer—G. Lang, Connecticut Chemicals (Canada) Ltd., Lachine, Que.

Serving with the officers on the board of directors are A. H. Carter, Green Cross Products, Montreal; R. T. Howard, A. H. Howard Chemical Co. Ltd., Orangeville, Ont.; Dr. G. V. Jansen, S. C. Johnson & Son Ltd., Brantford, Ont.; R. S. Sweet, Success Wax Ltd., Quebec City, Que.; A. L. Taylor, R. M. Hollingshead Co. of Canada Ltd., Toronto.

Secretary-Manager is Michel Chevalier.

Though the headquarters of the association will eventually be situated in Toronto, temporary headquarters have been established at 1005 Sherbrooke Street West, Montreal 2.

The first annual meeting of the Canadian association has been scheduled for Nov. 13-14 at the Queen Elizabeth Hotel, Montreal.

The purposes of the Association are to sponsor scientific research; collect and disseminate information of interest to the members of the chemical specialties industry; promote the use of products through co-operative advertising, consumer education and other similar means; assist and advise members in the fields of legislation, precautionary labeling, toxicity and statistics; and plan and organize annual conventions and special meetings.

George E. Flemming

In order not to duplicate the work of the C.S.M.A., the Canadian group has established a working agreement with C.S.M.A. under which C.S.M.A.'s testing material and technical data will be distributed in Canada, where applicable. C.S.M.A. and CCSMA have other working arrangements, including extending privileges of attendance at meetings, at regular rates, to members of both groups.

Qualifications for membership are as follows: *Active*—any reputable individual or firm in Canada engaged in the manufacture of chemical specialties; *Associate*—any reputable individual or firm, either domestic or non-Canadian, supplying materials and/or services to the chemical specialties industry; *Non-Canadian*—any reputable individual or manufacturer of chemical specialties located outside Canada.

•

Ungerer Names Dittrich

Frank F. Dittrich has been elected treasurer of Ungerer & Co., New York, essential oils and aromatic chemicals producer. Mr. Dittrich was formerly company controller, and has been associated with Ungerer for 16 years. He is also secretary - treasurer of The Essential Oil Association of the U. S.

THINKING ABOUT PACKAGING
NITROGEN AEROSOLS?

JG'S MODEL 14B NITROGEN GASSING MACHINE CAN HANDLE THE JOB!

LABORATORY • SEMI-AUTOMATIC • AUTOMATIC

For conventional pressure filling of king-size containers and standard-size closures:

Model 14-A
- 0 to 500 cc. capacity
- Up to 30 injections per minute

Model 14
- 0 to 300 cc. capacity
- Accurate within ± 75% on injections down to 5 grams

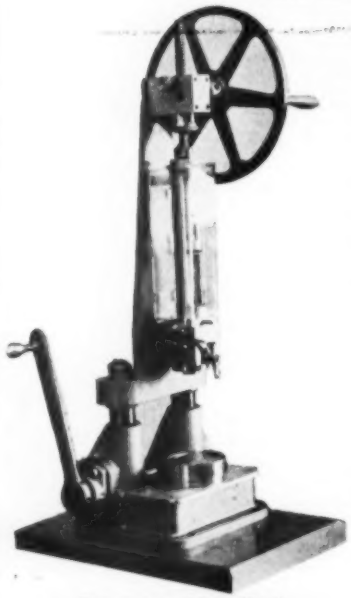
PURGERS • PROPELLANT PUMPS • ACCUMULATORS • CRIMPERS
STAINLESS STEEL HOT WATER BATHS • PROPELLANT SIGHT GAUGES
SINGLE AND DOUBLE PRODUCT FILL • PRESSURE BURETTES • CAN CLEANERS

JG MACHINE WORKS
452-58 WEST 46th ST., N. Y. C.
Circle 6-6373

DEVELOPED FOR THE CONSULTING LABORATORY, THIS APPARATUS IS THE ULTIMATE IN FUNCTIONAL DESIGN AND PERFORMANCE

Our apparatus division has been set up to make all items available to the industry. Prices and descriptive literature on request.

APPARATUS AVAILABLE

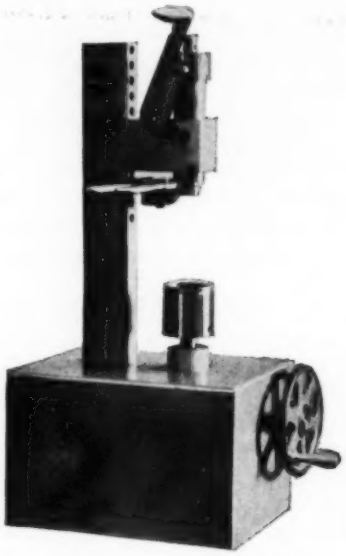


Foresman Liquefied Gas Manipulator

Cont. Filling Corp. Clinch Torque Meter

Liquefied Gas Manipulator w/Universal Head
Propellant Manifold for Manipulator
Hand Operated Vial Capper
Change Parts for Vial Capper
One inch opening Can Closing Press
Hydrostatic Test Units
Karl Fischer Pressure Titration Cells
Dead Stop Indicator for Karl Fischer Titrameter
Density Units
High Pressure Test Bombs
Can Sampling Units — Piercing or Valve Actuating
Pressure Gauging Unit — Pressure Balance or Water Filled
Test Ovens — Standard or Custom Built
Instantaneous Chiller Units—Mechanically Refrigerated
Electric Hot Water Test Bath
Hot Water Bath Transfer Baskets Safety Top Tank Racks
Table Tank Rack Combinations
Safety Screen Tubes for Glass Pressure Tubes
Plastic Protective Screens
Gloves and Masks

Apparatus Division
ROBERT A. FORESMAN, JR.
(Aerosol Consultant)
1690 Margaret Street
Philadelphia 24, Pa.



Foresman Hand Operated Vial Capper

NEW...

LOW COST TWO LINE FILLER

TYPE 15 NH 2

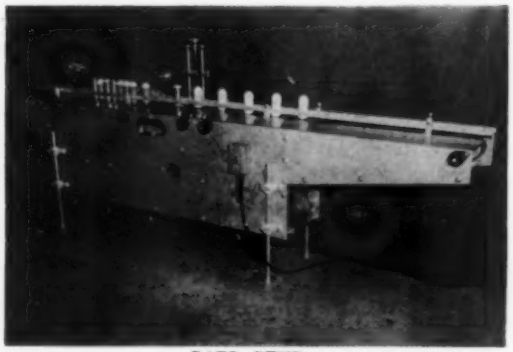
- Simple adjustment for different height containers (no changing of nozzles)
- Rising table "bottom up fill"
- Diagonal filling saves space, easier handling
- "No container-no fill," each line
- Accurate positioning
- Micrometer quantity adjustment
- 15 to 30 cycles speed range
- For liquid, viscous or semi-viscous products
- Lowest priced 2 line filler

Write for details

HOPE MACHINE COMPANY
9400-82 STATE ROAD • PHILA. 14, PA.

CODE DATING MACHINE FOR AEROSOL CANS

Will mark the top or bottom or both at the same time



PATS. PEND.

Kiwi® Coders Corporation announces a new power-driven machine for economically and automatically code dating the concave bottoms of pressurized cans or flat bottoms of other round containers. Can also be used as a work table for affixing parts to cans.

Send details on your specific marking problems.
Literature available on all types of applications

Kiwi® Coders Corporation

4027 N. Kedzie Ave. • Dept. AA • Chicago 18, Ill.

Van Ameringen Names Gen. Mgr.

It was announced late in May by van Ameringen-Haebler, Inc., that Robert W. Teegarden is promoted to general manager of the company's Union Beach unit. Mr. Teegarden has served as head of the research department, and in various other capacities in production, since joining the company in 1932, when all manufacturing and research facilities were headquartered at the Elizabeth, New Jersey plant.

The 150 acre, $3 million Union Beach unit was started in 1950 and since that time the company's chemical manufacturing, engineering, research and development departments have been enlarged considerably and consolidated at that location.

The company announced earlier that Dr. Ernst T. Theimer had been advanced to director of research, with headquarters at the Union Beach plant. Charles O. Tanc, vice president of van Ameringen-Haebler, Inc., who has been in charge of manufacturing for most of the 40 years he has been associated with the company, will continue at the Union Beach unit in a staff and advisory capacity.

•

Brockway Elects Mengle

G. A. Mengle, president of Brockway Glass Co. since 1949, has been elected chairman of the board and chief executive officer. Elected company president is Finley B. Hess, who was executive vice-president.

Food Symposium

(*From Page* 34)

table organism that may have reentered the package. Since there is a linear relationship between the internal can pressure and the can center temperature, however, he declared, it might be a disadvantage in the case of soluble propellants in that the charging pressure would rise too high for normal commercial filling procedures.

This generalization applies particularly to soluble gases in those products, subject to bacterial spore spoilage, which would have to be packed in cans at 220° to 240°F. Commercial cans, Mr. Giggard pointed out, are incapable of withstanding pressures at such temperatures, and only nylon as a valve material would be capable of withstanding the pressures.

An alternative to this, he suggested, is the aseptic canning method currently being used by the Avo-Set Co., in which the product, container, closure, and valve are heat sterilized and then the product and propellant are filled under sterile conditions. Mr. Giggard declared that this is the only satisfactory method of treating pressurized products which are to be charged with soluble gases.★

•

Carbide Appoints Chivvis

Arthur Beecher Chivvis has been appointed to the fluorocarbon propellant sales staff of Union Carbide Chemicals Co., a division of Union Carbide Corp., New York. The appointment is another step in the company's organization for marketing propellants to be produced this fall at a new Union Carbide unit at Institute, W. Va.

From 1950 until the present, Mr. Chivvis was assistant to the sales manager and regional sales manager of the Aerosol Division of Bridgeport Brass Co. He was in charge of contract filling sales, export sales, and sales to U. S. military commissaries and post exchanges. Prior to his association with Bridgeport Brass, he served as field director, in charge of a field staff of 150, and later was research associate with Elmo Roper & Associates, New York.

PVP Cleared

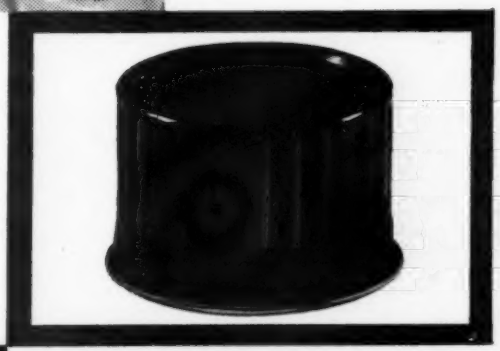
(*From Page* 17)

employees working under these conditions have shown *no* toxic or pathological respiratory symptoms, either in x-ray, blood tests, or other detailed medical examinations."

For the Calvert City plant, he reported, the micron size of the dust was slightly larger (due to a different manufacturing method) but here too there was no evidence of any pathological respiratory symptoms. Both plants are owned and operated by General Aniline & Film Corp., chief supplier of PVP to the aerosol industry.

Dr. Shelanski also reported on some carefully controlled laboratory PVP feeding tests involving 200 rats and 16 dogs. On all these, he reported, only one rat developed mammaliary

best dressed aerosols are wearing...



Serving Aerosol Manufacturers the World Over.

LUDWIG CLOSURES

185 Oakland Street, Brooklyn 22, N. Y.
EVergreen 3-2197

cancer (which is a common rat ailment).

He reported that a new lung disease "pulmonary alveolar proteinosis" (first reported to the International Academy of Pathologists in April by Dr. Samuel H. Rosen, of the Armed Forces Pathological Institute) has symptoms similar to those reported in the St. Louis article. However, he pointed out, two and a half times as many of the patients were men as there were women, and therefore hair sprays could hardly be blamed.

In conclusion, Dr. Shelanski declared that it is "generally appreciated that widespread use of any product would be accompanied by misuse" and that it is intended that hair sprays not be inhaled.★

Aerosol Survey

(*From Page* 23)

years ago. Room deodorant production touched almost 42 million in '57, an 18.8% increase over the 35,311,000 unit total in 1956. The insecticide figure was 41,607,000.

Pigmented and metallic paints and clear plastic sprays showed one of the greatest percentage growths, going up 62 percent to 36,527,000 units from the 22,577,000 total in 1956.

Household aerosol products, including room deodorants and cleaners, accounted for over 70,000,000 units, attesting the housewife's growing acceptance of the easy push-button method of doing household chores. Glass cleaners, reported for the first time as a separate product type in this group, showed 11,227,000 units, while shoe or leather dressings, another newly-reported category, recorded a figure of over 4,270,000 units produced in 1957.

Personal products, of which hair sprays and shave creams are the standout products, reached a new high of 175,000,000 units and the increasing impact of aerosols on women consumers is indicated by the impressive jump in colognes and perfumes to a figure of 17,881,000 as compared with 8,768,000 in '56.

Medicinals and pharmaceuticals, one of the most promising new fields of aerosol packaging, more than doubled in output from 1956 to 1957, hitting a 5,800,000 figure.★

SURVEY OF AEROSOL AND PRESSURIZED PRODUCTS FILLED IN 1956
(NON-FOOD PRODUCTS ONLY)

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION
INCORPORATED

Number of units filled by 83 companies in their own plants in 1956, including government contracts.

Product	*NUMBERS OF UNITS FILLED*				
	Glass Containers All Sizes	*Metal Containers*			
		12-Ounce But Over 12	*12-Ounce But Over 6*	*6-Ounce And Less*	*Total*
INSECT SPRAYS					
1. Space Insecticides	....	1,920,670	29,403,861	3,624,256	34,948,787
2. Residual Insecticides (such as roach and ant sprays)	....	828,504	7,787,224	293,530	8,909,258
3. Residual Insecticides (household and garden)	....	375,836	1,156,178	145,330	1,677,344
4. Mothproofers	....	1,511,188	5,049,578	150,175	6,710,941
COATINGS					
5. Pigmented and Metallic Paints	....	6,621,482	11,839,944	1,123,042	19,584,468
6. Clear Plastic Sprays	....	1,422,217	1,378,332	172,401	2,972,950
HOUSEHOLD PRODUCTS					
7. Room Deodorants	*	236,414	11,015,034	24,060,199	35,311,647
8. Fire Extinguishers	....	1,855,571	989,499	*	2,845,070
9. Snow (all types)	....	1,768,519	4,143,709	498,003	6,410,231
10. Other Household Products (cleaners of all types such as metal, oven, rug and upholstery; waxes, insect repellents, water repellents, shoe dressings, etc.)	1,491,904	8,599,417	4,515,238	8,476,124	23,082,683
PERSONAL PRODUCTS					
11. Shaving Lather	....	*	10,735,586	31,332,912	42,068,498
12. Hair Lacquers	5,097,320	5,639,895	21,816,463	47,087,247	79,640,927
13. Medicinals and Pharmaceuticals (such as fungicides, burn treatments, topical antiseptics, anesthetics, antibiotics, inhalants, etc.)	723,195	*	318,516	1,233,464	2,275,175
14. Colognes and Perfumes	7,024,163	....	250,000	1,494,764	8,768,927
15. Other Personal Products (such as shampoos, personal deodorants, sun tan oils, hand lotions, powders, depilatories, etc.)	756,412	....	1,844,271	5,028,518	7,629,201
MISCELLANEOUS					
16. Miscellaneous Products (Such as pet sprays, mildew preventives, ignition sprays, anti-static sprays, stencil ink, belt dressings, industrial applications, lubricants and any others)	*	1,997,236	6,014,805	2,342,305	10,354,346
TOTALS	15,092,994	32,776,949	118,258,238	127,062,272	293,190,453

* Too revealing to be released.

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Crown Adds 6-Oz. Can to Line

A new 6-ounce fabricated aerosol container has been added to the standard line of Crown Cork & Seal Co., Philadelphia, bringing Crown's line to three sizes: 6-ounce, 12-ounce, and 16-ounce. The new aerosol size offers fillers an economical cosmetic-size container. It is the same body diameter and height as the deluxe Crown seamless Spra-Tainer, used for deodorants, toothpaste, and sachet mists.

Crown's line now includes five aerosols, including 6 and 12-oz. seamless Spray-Tainers, and the three standard line fabricated cans.

The new 6-ounce can is constructed with tabs outside to provide smoother inside finish and better lacquer application. The top is the standard shallow drawn profile to accommodate a 1-inch valve mounting cap.

Aerosols in Review

(*From Page* 52)

type of application will no doubt be expanded in the near future.

". . . In view of the hygroscopic properties of PVP and anhydrous alcohol, care must be exercised in the manufacture of the aerosol hair spray with particular attention being paid to moisture contamination. Under the most exacting production conditions, a certain amount of corrosion will be evident under normal shelf life and accelerated tests. It is therefore recommended that care be exercised in the selection of the perfume blend for this type of product."

The article concludes with a warning that the perfume composition must be stable in the presence of free acids and must also be able to maintain the characteristics of its fragrance, and that containers and valves used in the product must be selected with great care.★

European Assns.

(*From Page* 46)

sol association activity was above expectation in Europe. 2. Although aerosol associations will be formed on a national level, the aerosol industry in Europe largely prefers to be tied into an international group as a more rewarding step. 3. For the time being, the CSMA should stay close to and observe these activities yet allow them to solve their own unique problems in their own way. 4. Eventually it would be definitely advantageous and very helpful to our aerosol industry here, to have some type of cooperative undertaking with an European International Aerosol Association.★

Editor's Mailbag

(*From Page* 12)

priced article. In Great Britain we have found that this cost factor alone has been sufficient to stimulate an interest in aerosol filling in a customer who would ordinarily be unable to afford aerosol packaging because of the higher cost of imported equipment.

It might also be mentioned that we are manufacturers of cold and as well as pressure aerosol equipment, and therefore have no particular axe to grind for one method over another. Instead, an effort is made to supply the equipment most suited to the user's individual needs.

Ian Eyles
Managing Director
I. F. Eyles (Refrigeration) Ltd.
Stroud, (Glos.) England

Dr. Tom Clark, author of "Pressure Packaging Overseas," writes, "In the original article I wrote that the British pressure equipment employed high pressures. Actually, they employ pressures of from 12 to 14 atmospheres, as compared to about 6-10 for the Swiss equipment. As to charging cylinder capacity, the British equipment has under 200 grams, while the Swiss has 360 to 375 grams for its larger units. This information comes from respective catalogues of the equipment suppliers—The Editor.

Labeling Aerosols

(*From Page* 20)

"The key sentence in this portion of the opinion is the statement of the duty of the distributor to take reasonable precautions to avoid reasonably foreseeable injuries to the user. Thus, not only the hazards encountered in the directed use of the product must be considered but also those which are reasonably foreseeable. . . . Had the product been packaged in combination with other chemicals in an aerosol package, it is possible and perhaps probable that this use would

not have been a reasonably foreseeable use of the product since it does not appear likely that an aerosol container containing carbon tetrachloride and directed to be used as an insecticide or possibly a fire extinguisher would be used to clean floors. We must consider then, in preparing an appropriate label, the customary use of the product and whether it is packaged in a manner in which varied number of uses might be made of the product."

Mr. Ackerly's paper cautioned that for aerosols "one must consider not only the hazard in the handling and disposal of the container, but also the possible hazards in the use of the preparation reasonably to be anticipated. The area of reasonable anticipation may well differ when the product is packaged in a pressurized as against a non-pressurized package."

. . . "Another area of possible hazard, although minimal apparently in the field of household chemicals, is that of allergies and sensitizers. The courts have not yet imposed upon a manufacturer liability to persons who are allergic or supersensitive to certain chemicals. The American Medical Association has recommended, however, that household chemicals bear an appropriate warning where there is a reasonable incidence of allergic or sensitized reactions. This requirement would impose a very substantial burden on the manufacturer, yet it is not clear just how it could help the allergic user."★

Instrumentation

(*From Page* 19)

to measure particles in the 0.05 to 5 microns size range.

Turning to instruments for determining non-absorbables, Mr. Leighton went into considerable detail on a new device developed by Union Carbide for establishing the air content of fluorocarbon propellants. "It should also prove applicable to checking the air content of hydrocarbon propellants and may, with further investigation, prove applicable to air content check of the vapor phase of aerosols, containing a relatively non volatile concentrate. Other similar pieces of apparatus have been previously described in trade literature but found to introduce serious errors due to the residual air volume of the absorption manifold tubing or complexity of manipulations.

"The fluorocarbon gas to be sampled is allowed to purge through a vent connection at a three-way inlet cock. Mercury from the 100 ml gas burette has been made to fill an inlet cock to the burette. Exactly 100 ml of gas is drawn into the burette below another three-way stop cock located just above the burette. This second three-way stop cock comes as a standard part of the burette. By adjusting the mercury level and venting through the first three-way stop cock a 100 ml gas sample at atmospheric pressure is confined in the burette. The leg between the burette outlet and the perchlorethylene absorption chamber has been left filled with mercury from the previous run. As the 100 ml gas sample is discharged to the absorption chamber the small amount of mercury in the connecting leg is forced into the sump section of the absorption chamber and can be removed through the stop cock at the bottom. Thus exactly 100 ml of gas, measured at atmospheric pressure, is passed to the absorbing perchlorethylene and any non-absorbable air is measured directly in the small burette leg on top of the absorbing chamber, which permits readings to the nearest 0.05 ml or 0.05% by volume."

Another instrument, this one to measure viscosity, was also described. This instrument is important for such products as paints, lacquers, varnishes, and emulsion-type products all of which must be "kept within relatively narrow viscosity limits to ensure dispensing a product with requisite spray characteristics and consistency. In the case of surface coatings, proper viscosity assures even flow-on without sagging. In the case of soap, wax and other type emulsions, the solidity, stiffness, or body of the dispensed product is controlled to a large extent by viscosity. Viscosity of the packaged product cannot be assured positively on the basis of exact

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weight formulation alone. Mixing time of ingredients, temperature and possible weighing errors may enter the picture. In order to prevent possible loss of a large dollar volume of finished aerosol product, a direct 'as packaged' viscosity check seems highly desirable."

Union Carbide's studies in the field were done with an "Ultra Viscoson" viscosity measuring instrument manufactured by the Cincinnati Division of Bendix Aviation Corp. This device can measure the viscosity of the "as packaged" aerosols and also give readings in centipoises times density. Mr. Leighton described the instrument as operating on an "ultrasonic principle with a sensitive two-inch long blade of the probe tube being pulsed by an induction coil at a sonic frequency. The energy used up by the blade in shear action against a fluid being checked provides the viscosity measurement means.

After detailing exactly how the instrument is used (and how it functions from a technical standpoint). Mr. Leighton described how his company has compiled a viscosity vs. temperature chart for varnish formulations, through use of the unit. "We are striving to come up with a resin solvent system of relatively high viscosity which will give the consumer better coverage without increasing the contract filled costs for concentrate. We are convinced that with further study the 'Ultra Viscoson' instrument can be adapted to quality control checks of viscosity of packaged aerosols on filling lines. Consideration is being given to development of special probe tube fitted containers that can be run through a filling line at intervals and then connected to a computer and recorded as they come off the line.

"On a cold fill line it would seem feasible to get viscosity checks at the low fill temperature, at room temperature, and finally at the 130°F. water bath temperature."

In conclusion, Mr. Leighton discussed a special technique for introducing a sample to a gas chromatograph, involving a plastic beach ball to hold the entire volatile propellant portion of an aerosol container for subsequent feeding of a sample to a chromatography instrument sample loop. The beach ball was first evacuated to a few microns pressure and then relaxed slightly by bleeding in a small amount of helium before filling with gas discharged from the aerosol container."★

Chlorothene

(*From Page* 21)

irritating to the eye. For further evidence of toxicity possibilities, he reported, exposing of test animals every half hour to dense fogs of hair sprays containing 26% of Chlorothene and no Chlorothene caused no apparent effects.

Mr. Schober made special mention of the cost factor in a standard aerosol formulation:

3%	PVP
1%	Plasticizer and modifiers
26%	Anhydrous ethanol
26%	Chlorothene
22%	Propellant 11
22%	Propellant 12

"The first four components of this formulation are prepared as the concentrate to which is added the 50-50 Propellant 11 and 12 composition. The resulting composition would exert a pressure of 21 psig. The propellant portion of this formulation would cost 19.9 cents per pound based on tank car prices for all constituents. This would mean that for one million 12-ounce aerosol hair sprays, a savings of $14,000 could be realized."

The subject of leakage losses also came up in Mr. Schober's paper. In the 26% Chlorothene formulation, he declared, "leakage losses with buna gasketed valves range from a low of 0.6 of a gram to a high of 1.1 gram for those containers stored at 75° F. for one year and 1.6 grams to 2.4 grams per year at 120°. Valve leakage studies on Chlorothene containing propellant systems have shown that buna gaskets perform more satisfactorily than do neoprene. In fact, systems consisting of 75% Chlorothene and 25% Propellant 12 were found to lose only two to three grams per year at 75° F. when valves with buna gaskets were used."

Mr. Schober advised that no can corrosion was experienced in lacquer lined containers, but acknowledged that slight corrosion was detected in tin-plated containers (when no corrosion inhibitors were used). He also described a steel strip testing method (in which steel strips were placed in glass containers packaged under pressure) and reported that a light pitting at the interface and vapor phase were noted when no corrosion inhibitors were used.

In conclusion, Mr. Schober declared that Chlorothene causes very little odor problem, and that any Chlorothene odor can be "easily neutralized" with aromatics currently on the market.★

Pesticide Hazard

(From Page 22)

Dr. Zavon praised the insecticide industry and government agencies for doing a "remarkably good job" in eliminating insecticide hazards, but warned that all the precautions taken have not completely eliminated all the injury.

The chlorinated hydrocarbons (DDT, chlordane, lindane, benzene hexachloride, dieldrin, methoxychlor, heptachlor, and toxaphene) he cautioned, will, in sufficient concentration, act as convulsants in warm blooded animals. "There is a wide range in the dose that is fatal to man, but in the concentration used in most household preparations it is difficult to ingest enough of the active ingredient to cause a toxic reaction. More often than not the reaction reported is to the vehicle rather than the insecticidal ingredient."

"The chlorinated hydrocarbons can cause the following symptoms, generally in order of increasing dose:

(a) a numbness or tingling sensation, particularly around the mouth.
(b) tremors that may develop around the eyelids and face and gradually spreading to the rest of the body.
(c) there may be loss of appetite, nausea, and vomiting.
(d) lastly, convulsions may result.

"The chlorinated hydrocarbons may be taken into the body by mouth, via the nose, throat, and lungs, and by passage through the intact skin. Among this group threre is considerable variation in the dose required to cause an effect on humans but this difference in dosage to a great extent parallels the difference in concentration required to kill insects."

Of the next major group of materials used in the formulation of household insecticides (pyrethrum, allethrin, rotenone, and organic thiocyanates), Dr. Zavon declared none are highly toxic, but that all can cause serious illness if taken in sufficient quantities. "They may cause differing symptoms. Pyrethrins are known to be more offensive as skin and respiratory sensitizers than are the others in this group or any of the other available insecticides."

Turning to labeling as a means of preventing accidental poisoning, Dr. Zavon declared that the labels on small containers are often burdened with so much information in such a small space that it requires real effort to read the writing. He suggested further consideration of the idea of distinctive and easily recognized colors to indicate materials that can be absorbed through the intact skin or by breathing, or that would indicate a highly volatile material.

"Packages sold within the borders of one state are often inadequately labeled. Many will have only the trade name and occasionally not even include the name and address of the seller. From the point of view of the physician called on to treat a child who had taken a powder from an unlabeled package there is no more difficult and frustrating experience. Even more disturbing is the package that is labeled with all the ingredients but is misleading by the very nature of the label. An example of this last type of label is the roach powder containing 10% DDT. The DDT was listed in letters an inch and a half high and in much smaller letters at the bottom 'sodium fluoride 40%.' If ever I've seen a booby trap this was it. Another example is the insecticide containing malathion, chlordane, and well down on the list one of the most toxic materials used, thallium."★

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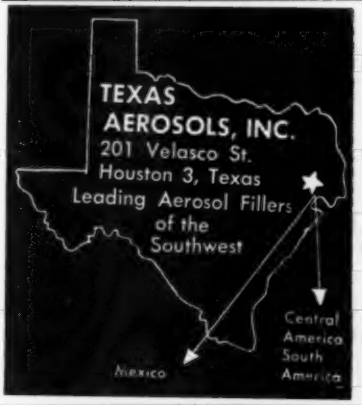

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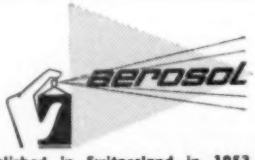

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Pressurized Foods

(*From Page* 19)

method of packaging these foods will be a form of 'aseptic canning.' The essential steps would be to fill the sterilized product into sterile containers, mechanically insert sterile valves and pressurize with sterile gas in a sterile chamber. Variations of this method are now being used to package sterile whipped cream.

"Not only the design but the choice of materials used in the manufacture of valves for dispensing pressurized low-acid, low-solids foods will be important factors in the successful packaging of this class of foods. The valves must be constructed of materials that can withstand sterilizing temperatures. The valves preferably should be designed so that they not only dispense the food satisfactorily, but also virtually eliminate food residues from the exposed part of the valve after use. Substantial food residues may become contaminated and subsequent spoilage develop.

"The reformulation of foods so that they can be dispensed from pressure containers should be done with caution. For example, changing the formula of the non-pressurized cheese product, welsh rarebit, by replacing some of the cheese with milk solids changes the process requirements of this product. Pressurized cheese dips may be similarly affected. Lowering the soluble solids content of syrups may also change their process requirement."★

Great Britain

(*From Page* 42)

per Flame", "Black Starlight" and "Blue Diamond". Each particular color is designed to give a tinting shade to the hair, and the products, which have their origin in France, contain vitamins and lanolin. The package itself is rather striking. A four-ounce aluminum container (diameter 114) coated with a black enamel is used. A black paper label with a colored band appropriate to the shade of the product is employed. A Precision valve with a black actuator is mounted in a gold lacquered valve cup and the protective cap which fits within the valve cup, is made of anodized aluminum. The only point to criticize is the use of the term "bombes" in the Trade Press advertisements.

The Riker "Medihaler" packs are now on sale in the U.K. Initially "Medihaler Epi", containing 7 mg/cc Adrenaline Acid Tartrate B.P. and "Medihaler Iso" containing 2 mg/cc Isoprenaline Sulphate B.P. are being offered. Both are used for the treatment of bronchial asthma. "Medihalers" can be prescribed as complete outfits and as refills and the oral adaptor is included in the Drug Tariff. A metering valve fitted to a stainless steel vial is used. The "Medihaler" is the first of the numerous medical products which are expected to be marketed in the next twelve months.

Another new product on the market is "Secto Repellent", an insect repellent spray for personal application. So far as is known this is the first product in the U.K. which incorporates diethyl toluamide. It is claimed that after one application mosquitoes are repelled from six to eight hours; horseflies, midges and wasps from two to four hours. A four-ounce (diameter 202) built-up tinplate container fitted with a Precision Valve is employed.

I recently had the privilege of visiting the filling plant at Safco Aerosol Manufacturing Ltd., at Bracknell, near Ascot, Berks. One of the leading British contract fillers, Safca occupies an ultra-modern factory in one of the new towns that have sprung up around London since the last War. The company has recently purchased a number of modern filling units from the United States and with its enthusiastic staff appears to be well on the way to becoming one of the most important fillers in Europe. According to Safca's managing director, M. N. Conville, to date the company has packed more than 60 different products. Safca is purely a contract filler and does not market any products of its own.★

New Aerosol Patents

Listed below is a brief review of recent patents pertinent to the aerosol and related industries.

Complete copies of these patents may be obtained by writing to the publisher of this magazine, Aerosol Publications, Box 31, Caldwell, N. J., and remitting 50c for each copy desired. For orders received outside of the United States the cost will be $1.00 per copy.

2,830,100. PREPARATION OF 1,1-DIFLUOROETHANE. Issued April 8, 1958 to Frederic W. Swamer, Boothwyn, Pa., assignor to E. I. du Pont de Nemours and Co., Wilmington, a corporation of Delaware.

The process for making 1,1-difluoroethane which comprises dissolving a member of the group consisting of anhydrous titanium tetrachloride and anhydrous antimony pentachloride in a concentration of from 1% to about 5% by weight in substantially pure liquid HF, and then passing gaseous acetylene free of catalyst poisons into the solution while maintaining the solution at a temperature of from about 0° C. to about 65° C. and under a pressure of from 0 to about 75 p.s.i. gauge sufficient to maintain the HF in the liquid state at the temperature employed.

•

2,830,101. PREPARATION OF 1,1-DIFLUOROETHANE. Issued April 8, 1958 to Frederic W. Swamer, Boothwyn, Pa., assignor to E. I. du Pont de Nemours and Co., Wilmington, a corporation of Delaware.

The process of making 1,1-difluoroethane which comprises distributing an anyhydrous metal chloride of the group consisting of stannic chloride and titanium tetrachloride on a porous carbon support in a proportion equal to from about 10% to about 40% by weight of metal based on the carbon support, treating the supported metal chloride with substantially pure hydrogen fluoride for at least about 30 minutes at a temperature of from about 25° C. to about 50° C., then contacting with the resulting supported catalyst a mixture of substantially pure gaseous hydrogen fluoride and gaseous acetylene free of catalyst poisons in a ratio of from about 1.5 to about 3 moles of hydrogen fluoride to each mole of acetylene at a temperature of from about 25° C. to about 50° C. and under a pressure below the condensation pressure of hydrogen fluoride at that temperature.

•

2,830,742. AEROSOL SPRAYER. Issued April 15, 1958 to Edward James Gibbons, New York, and Arthur Ira Gebhart, Union, N. J., assignors to Colgate-Palmolive Co., Jersey City, N. J., a corporation of Delaware.

An aerosol sprayer device for holding a container of pressurized aerosol spray material and actuating the discharge valve mechanism thereof in response to finger movement comprising, in combination: a longtitudinal supporting member having a handle at one end; annular clamp means attached to the other end of the longtitudinal supporting member and positioned in the same plane, adapted to encircle the container wall and to be contracted about said wall and thereby securely to support the container in fixed relationship with the longitudinal member at the end thereof, the clamp means being free of obstructions which would be in the path of an aerosol spray discharge from a container held thereby and directed parallel with the longitudinal axis of and away from the longitudinal supporting member; an actuator lever pivoted on the longitudinal supporting member and having a portion situated above said longitudinal supporting member adapted to contact the discharge valve mechanism of a clamped aerosol container; and pull means connecting at one end with the actuator and at the other end terminating near the handle and being adapted for finger engagement so that the discharge valve of the aerosol container can be opened by a pull of a finger of a hand grasping the handle of the aerosol sprayer device.

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2,830,929. METHOD OF AEROSOL DISINFECTION WITH HYDROXY ALKYL SUBSTITUTED CYCLOHEXANOLS. Issued April 15, 1958 to Friedrich August Fries and Erich Berger, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany, a corporation of Germany.

Method in disinfecting rooms which comprises applying thereto in the form of an aerosol a 1-(2'-) hydroxy-cyclohexyl)- 1-alkanol of the general formula in which R is a lower alkyl group containing from 1 to 4 carbon atoms.

•

2,831,035. MANUFACTURE OF FLUOROCARBONS. Issued April 15, 1958 to Edward A. Tyczkowski, Rockaway, and Cyril Woolf, Morristown, N. J., assignors to Allied Chemical Corp., New York, a corporation of New York.

The process of enriching the fluorine content of an aliphatic perchlorofluorocarbon compound which comprises forming in a reaction zone a mixture of an aliphatic perchlorofluorocarbon compound starting material—containing from 2 to 8 carbon atoms and containing at least one fluorine atom and at least one chlorine atom—and a fluorinating agent of the group consisting of elemental fluorine and chlorine trifluoride, said agent being present in quantity sufficient to provide for any unsaturation of the starting material and for chlorine displacement therefrom, heating said mixture in said zone in the presence

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of a substantially anhydrous aluminum fluoride catalyst having crystallite size not substantially greater than about 500 Angstrom units radius and having been derived by reaction of aluminum chloride and HF, said heating being effected at fluorination temperature in the range of about 50-400° C. and for a time sufficient to further fluorinate a substantial amount of said starting material and to form gaseous reaction product comprising a saturated aliphatic perchlorofluorocarbon product compound containing from 2 to 8 carbon atoms and more fluorine than said starting compound, discharging said reaction product from said zone, and recovering from said reaction product saturated aliphatic perchlorofluorocarbon compound containing from 2 to 8 carbon atoms and more fluorine than said starting material.

•

2,831,511. GENERATOR OF AN AEROSOL OF POWDER PARTICLES. Issued April 29, 1958 to Jerry L. Stockdale and Carl L. Meyer, Columbus, Ohio, assignors, by mesne assignments, to The Haloid Co., Rochester, N. Y., a corporation of New York.

A generator of an aerosol of powder particles for development of xerographic images comprising a gastight housing, an input tube extending into said housing, an output tube having an internal opening within the housing and an external opening extending outside said housing, said input tube being adapted to supply a flow of gas to said housing from a gas source at a sufficient pressure to form an aerosol of powder particles at the internal opening of the output tube and said output tube being adapted to feed an aerosol of powder particles from said housing, an endless belt of material positioned and disposed in said housing adapted to hold powder particles releasable to gas flow through said belt, means to drive the belt at a uniform rate of speed to move the belt through a path of travel including a supply of solid developer powder in the bottom of the housing and thence over the internal opening of the output tube, and means within said housing to substantially uniformly impregnate and load said belt with powder particles in the path of travel of said belt prior to movement over the internal opening of the output tube, said input tube being positioned and disposed relative to said belt and its path of travel and relative to said output tube to feed gas fed into said input tube first into said housing and then through the portion of the belt material over the internal opening of the output tube then out said output tube.

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W. Alec Jordan

Chemical Business Counsel

- Marketing Analyses
- Product Development
- Evaluation of Purchasing Determinants

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ORegon 9-1657

Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

LENS GLEEM, for spectacle lens cleaner. Filed April 29, 1957 by Leonard Friedberg, New York, claiming first use Jan. 22 of same year.

KING D (with "D" decorated with crown), for institutional deodorant. Filed June 17, 1957 by Edward Don & Co., Chicago, Ill. with first use Feb. 1956.

MULTI-SPRAY, for insecticides. Filed June 27, 1957 by M. F. A. Oil Co., Columbia, Mo., with first use claimed for May 3 of previous year.

BEHAVE, for hair rinses and hair sprays. Filed Aug. 2, 1957 by The Gillette Co., d.b.a. The Toni Co., Boston, claiming first use March 23, 1955.

SHAVE WHIP, for shaving cream. Filed April 1, 1957 by Campbell Products Co., Bensenville, Ill. with first use July 19, 1950.

OLD EMPIRE, for perfumes, colognes and cologne sticks, hair pomade and brilliantine, skin creams, hand lotions, shaving creams, after-shave lotion, and deodorants. Filed March 30, 1956 by Old Empire Inc., Newark, N. J., with first use claimed for Sept. 9, 1939.

QUIK-AIRE, for container of a liquefied gas under pressure for use as an emergency tire inflator. Filed July 9, 1956 by Kerr Chemicals Inc., Park Ridge, Ill., with first use claimed for June 21 of same year.

SPRING BREEZE, for household deodorant and air-sweetener composition. Filed June 20, 1957 by Pennsalt Chemicals Corp., Philadelphia, claiming first use Nov. 21 of previous year.

SHEEN, for foliage spray. Filed April 12, 1957 by Diamond Black Leaf Co., Cleveland, to Diamond Alkali Co., Cleveland, claiming first use Feb. 27 of same year.

MIDNIGHT OPAL, for hair tinting, dyeing and coloring prepartions. Filed Feb. 18, 1957 by Clairol Inc., Stamford, Conn., claiming first use for Nov. 23 of previous year.

AERO-SAN, for antiseptic preparation used as spray, applied to shoes for deodorizing and sanitizing purposes. Filed July 2, 1957 by DBA Products Co., Inc., Deerfield, Ill. with first use April 1 of same year.

WAVE MAGIC, for hair spray set. Filed Sept. 27, 1957 by Helene Curtis Industries Inc., Chicago, Ill. claiming first use Sept. 5 of same year.

AQUAGEN and NUROLIN, both for beauty lotions and creams. Filed April 26, 1957 by Hirestra Laboratories Inc., New York, with first use March 7, 1957.

BUG-BLITZ, for insect spray. Filed Aug. 14, 1957 by The Martin-Senour Co., Chicago, Ill., claiming first use July 3, 1957.

LAVENDER MIST (in fine script), for household spray deodorant. Filed Feb. 27, 1956 by The Andre L. Richard Co., Inc., New York, certifying first use April 25 of previous year.

FORMULA 9 MIST, for hair beautifier and conditioner containing lanolin adapted to be sprayed upon the hair. Filed March 7, 1956 by Charles Antell, Inc., Baltimore, Md., with first use claimed for Feb. 3 of same year.

•

Croda Forms Belgian Co.

Croda Ltd., Snaith, Goole, England, a leading European producer of lanolin and lanolin derivatives for aerosol products, has announced the formation of Croda Belge, a new subsidiary in Verviers, Belgium. There are no manufacturers of lanolin products in Belgium at present.

The new company is headed by F. A. S. Woods, president. Werner Daveloose is managing director. The new company will service Croda's customers in northern Europe, and will manufacture lanolin, using the same process as the English firm.

•

Bristol-Myers Names Two

The Bristol-Myers Products Division of Bristol-Myers Co., New York, has named Edward Gelsthorpe to the post of vice-president and general sales manager and F. Harry Fletcher to vice-president and national field sales manager. Mr. Gelsthorpe was formerly assistant vice-president and merchandising director. Mr. Fletcher was assistant vice-president and assistant sales director.

•

ConCan Appoints Fisher

Raymond G. Fisher, former director of sales research and production, has been appointed by Continental Can Co., New York, to the newly-created post of vice-president in charge of marketing.

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Increase Moplen Production

Montecatini, Milan, giant Italian chemical cooperation plans to triple the capacity of its polypropylene plant at Ferrara, Italy within the next year. The material is used for the manufacture of containers, and is currently under study for aerosol applications.

According to Giulio Ballabio, of Montecatini Societa Generale per l'Industria Mineraria e Chimica, work is now under way at Ferrara, Italy to expand the company's production of "MOPLEN" isotactic polypropylene materials from the plant's present 15 million lb. annual capacity to 45 million lbs.

The Ferrara installation was the world's first industrial plant for the manufacture of the new material, and has been in production since last September.

•

Givaudan Names Sales Agent

Givaudan-Delawanna, Inc., and Givaudan Flavors, Inc., have announced the appointment of Durkin Chemicals, Inc., as sales agents in Washington and Oregon. The company is located at 2603 Second Ave., Seattle.

OVER THE TRANSOM

AS will be seen by the multitude of meeting stories in the forward portion of this issue, the month of May has undoubtedly been the most busy month in recent memory for the aerosol industry. In addition to the CSMA mid-year meeting (a yearly feature) aerosol industry representatives were also much in evidence at the meeting of the Institute of Food Technologists (in Chicago) and at the Packaging Exposition at the New York Coliseum.

Earl Graham

A new feature at the CSMA convention this year was the contests. Two of the propellant suppliers, Union Carbide and DuPont, offered an attractive array of contest prizes—Carbide featured imitation mink stoles and a Polaroid land camera, and DuPont gave away portable transistor radios. Earl Graham, of the Clayton Corp., held the lucky ticket for the camera.

* * *

The interest in aerosols at the IFT meeting was gratifying indeed. Attendance at the special symposium on pressurized foods, arranged through the CSMA, was well over 250 (which is usually more than are present at one of the technical sessions of the Aerosol Division of the CSMA). Also, the demonstration of a full range of aerosol food products at the jointly-sponsored CSMA Aerosol Division booth attracted considerable interest and technical questions. Sponsors included three valve manufacturers (Clayton, Precision, and Risdon), four custom fillers (Fluid Chemical, Peterson Filling, Stalfort, and Western Filling), two container suppliers (Crown and Wheaton), one propellant supplier (DuPont), one aerosol consultant (Lodes) and one publication (*Aerosol Age*).

Mojonnier Associates also had an aerosol display, chief feature of which was some laboratory equipment, and Air Reduction Co., Felton Chemical, Van Ameringen Haebler, Fritzsche Brothers, Continental Can Co., American Can Co., Dodge & Olcott, Evans Research and Development, Florasynth Laboratories, Polak & Schwarz, Norda Essential Oil & Chemical Co., and Ungerer, all showed either finished aerosol products using their materials or aerosol components and materials.

* * *

A remarkable thing about the IFT representatives was their genuine surprise that the nitrogen package (which they were aware of for tooth pastes) could be adapted to so many food products. Of course there were some who expressed doubt that packaging and component costs could make the package applicable to their product. Shades of the insecticide industry eight or ten years ago!

Much of this same wonderment about aerosols was in evidence at the Packaging Exposition, but there less skepticism seemed to be in evidence. Again and again visitors expressed surprise that pressure packaging, the new stepsister of the packaging industry, had been able to make such giant strides in so short a time.

* * *

Time and space limitations prohibited *Aerosol Age* from devoting considerably more picture space to the Packaging Show and to the IFT exhibits. The booths were well worth the effort and the expense by the exhibitors.

* * *

The CSMA Aerosol Division's publicity committee and its public relations agency, G. M. Basford & Co., have succeeded in scoring two major public relations successes in a single month. Appearing on newsstands nationally in mid-May were the June issues of Coronet and American Home, and each contains a key feature article on aerosols.

It's probably safe to say that by July 4th more of the general public will be acquainted with aerosols as a distinctive product type than ever before!

Just a little, Stupid! Just a little!